**California State Journal of Medicine.**

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PHILIP MILLS JONES, M. D., Secretary and Editor

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ADDRESS ALL COMMUNICATIONS

Secretary State Society, State Journal, Official Register, - - - - - - Butler Building, San Francisco.

Telephone Douglas 2637

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## EDITORIAL NOTES

### ELIMINATING THE UNQUALIFIED.

The interesting condition of unrest which the JOURNAL has commented upon quite frequently during the past two years, and which has been so evident to all observers of sociologic conditions, is, as Favill points it, bound to result in many betterments though just how the result is to be reached may not at first be apparent. As the meaning of a word may, in time, be quite reversed through usage, so many of the ultimate developments of what may at first appear to be vicious to a given individual, from his point of view, may prove to be distinct advances in the welfare of all the people. For example, consider industrial accident insurance, and what will surely follow it before many years have passed, sickness insurance. There is room for honest difference of opinion as to whether this is a sociologic betterment or not. There is plenty of room for honest difference of opinion as to whether it is to be an advantage to the medical profession or a great harm; time alone will tell the true answer to these questions. In one way, however, it certainly seems to promise a decided advance for the injured working person, and, as he is so numerous, that means an advance for nearly all the people. The quack doctor, the incompetent physician, the faddist and the follower of unbaked or half-baked cults, will be eliminated. Why? Because of our old friend, "Dollars and Cents." A man will do a lot of foolish things or fail to do some sensible ones when merely his own health or the health of his family or other people is concerned, but when anything touches his pocket, he sits up and takes notice very quickly. The public health campaign cry of "millions for hogs but nothing for humans" is familiar to all of us and is an illustration. An employer of labor may be a Christian "Scientist," as also may be the manager of an insurance company covering a large number of working people, and they may rest quite tranquilly in their delusions so long as there is nothing much the matter with them and their pockets are not touched. But what will these shrewd business men do when some of the working people for whom they are financially responsible get into trouble and there is the possibility of a loss of hundreds or thousands of dollars? Is it not obvious? Are they going to take chances on the incompetent? Are they going to allow the possible loss of this money because of a faddist idea, or are they going to get the best medical aid they can secure? What business man, employer of labor or boss of an insurance company, is going to allow a naturopath, a poorly qualified physician or any one of the horde of freaks and quacks to endanger his money by caring for the injured persons for whom he is financially responsible? It is just common sense—the rarest of all things, to be sure, but still that is what it is called. And so, too, with the industrial sickness insurance work when it shall come, as come it surely will. A thoroughly skilful surgeon or physician may save the employer or the company a great deal of money; a poor practitioner or one who merely pretends to a knowledge of the healing art which in reality he does not possess would be an expensive luxury to the man who has to pay; and when it comes to paying, he is going to be mighty thoughtful. And so it looks very much as though some of the harm done by the passage of the absurd medical licensing law, will be counteracted by this other and far-reaching law. A considerable number of men have been licensed under the present act who tried repeatedly to secure licenses under the old law but who could not because they were not properly qualified. The records in our office cover all of these cases quite fully and so through the State Society office the big employer and the insurance man can be protected. Furthermore, if the County Medical Societies will follow out the plan of referring the names of all applicants to our office for investigation and report before election, these objectionable persons will not gain membership in our societies, and if the industrial work is limited to the members of our societies, it is also obvious that the employer, the state and the companies are at once insured against unknowingly employing one who is not a properly qualified practitioner of medicine and surgery. When it comes to our friend "Dollars and Cents," the process of eliminating the unqualified is certain sure.

### NO CITY LICENSE FOR PHYSICIANS.

An attempt by a California city to compel physicians to pay a city license tax on the practice of their profession within its limits was defeated May 18th last, when Judge F. G. Finlayson, of the Superior Court of Los Angeles County, pronounced the city ordinance in question unconstitutional.

In May 1912 the Board of Trustees of the City

of Glendora, Los Angeles County, California, passed a city ordinance which provided for the payment to the city of a $3.00 per quarter city license tax by every physician practicing his profession and having a fixed place of business in Glendora, or a tax of $1.00 per day on physicians not having an office or residence within the city limits. The ordinance also provided that the city authorities might collect the tax by suit against physicians refusing to pay. Dr. H. H. Chamberlain, of Glendora, decided to fight the matter. The suit begun in the Recorder's Court of Glendora, was transferred, on motion of the physician's counsel, to the Superior Court of Los Angeles County, where the matter was argued on the city's motion for judgment against Dr. Chamberlain. Counsel for defendant argued that the tax was illegal, in that there was no warrant of law for such an ordinance under the California statutes, that the practice of medicine is a profession, and not a business, and that the ordinance was otherwise objectionable as discriminating arbitrarily between physicians having an office in Glendora and physicians not so having an office there, and that therefore the ordinance was unconstitutional as imposing an unreasonable and arbitrary tax.

Judge Finlayson pronounced the ordinance unconstitutional as unreasonable and arbitrarily discriminative in its terms. The general question of whether or not a license tax can be imposed as a prerequisite to the right to practice in a city in this state was not passed upon, as the ordinance was held unconstitutional upon the ground that it was discriminatory and unreasonable.

## COUNCIL MEETING.

A meeting of the Council was held on the evening of May 23rd, for the purpose of considering the several matters referred to it by the House of Delegates at the last annual meeting. There were present Drs. C. G. Kenyon, O. D. Hamlin, René Bine, H. A. L. Ryfkogel, J. H. Parkinson, G. H. Aiken, A. W. Hoisholt, Harry M. Sherman and Philip M. Jones. The salary of the Secretary-Editor was fixed at $5,000 for the year 1914.

A communication from Dr. J. H. Hurst was presented and ordered laid on the table.

The Eye, Ear, Nose and Throat Section was granted a sum not to exceed $50.00 for legitimate expenses connected with the next annual meeting, all bills to be approved by the auditing committee. The Committee on the Conservation of Vision was granted a sum not to exceed $10.00 for postage in connection with its work. The deficit incurred by Dr. Tucker in the legislative work of the last session was not assumed by the Council as it was the sense of the Council that the expenses were at no time authorized by the Council.

In the matter of a proposed request to the legislature to pass a law separating the regular school from all other systems of healing and create a separate board of medical examiners, the question was ordered put off to a special meeting to be called for the purpose of discussing this one question and giving those interested a chance to be heard.

The Council did not endorse the resolutions introduced by Dr. Graves at the closing session of the House of Delegates at the last meeting.

The following resolutions were introduced and on motion laid on the table till the next meeting of the Council for consideration at that time:

Resolved that it be the sense of the Council, that on and after January 1st, 1915, suits for alleged malpractice arising in the course of "Lodge and Contract Practice" (see Council's report, June JOURNAL) be not defended by this Society. Be it further

Resolved, that pending a meeting of the Council, individual cases as they may arise be referred to the Chairman and Secretary for action in order that the rights of members be fully protected.

There being no further business, the Council adjourned.

## TAKE A VACATION.

If you have not done it already, do it as soon as you can; take a vacation. Get away from the routine; go somewhere, anywhere, but preferably near the Earth. No one leads such a narrowing life as the physician and no one needs to get completely away from it every once in awhile as does the doctor. He is eternally thinking and talking his shop. When two or three doctors are gathered together, they invariably begin to talk "shop"; they cannot keep away from it, so when you go on your vacation, do not go with another doctor. Any one who does not get away from his own little path in life once in awhile, gets stale; and it is not a good thing for your patients for you to get stale.

## A SIGN OF PROGRESS.

It is much more desirable, speaking merely economically, to save the life and restore the health of a satisfactory working unit, than to let that unit drag along in an unfit and unearning condition and die before the allotted years of usefulness have passed. Insurance companies are finding this out and are developing plans and methods for saving lives and not merely waiting around to pay for them when the life has gone out of the insured. On June 20th, the Metropolitan Insurance Company dedicated a tuberculosis sanatorium for its employees at Mt. McGregor, New York. This is a truly encouraging sign of awakened progress and means much more than appears in the mere announcement.

## ANOTHER WORD OF APPRECIATION.

A member living in Los Angeles, who was recently one of the defendants in a very bitterly fought suit for damages for alleged malpractice, which suit was defended and won by the legal department of the State Society, writes, in part, as follows:

> "It was a great relief when the suit was concluded in our favor. Such a case would make one appreciate the backing of the State Medical Society, if one needed stimulation for

such appreciation. . I wish to say further that the attorney for the State Society (in Los Angeles), Mr. Morrow, is, in my opinion, a real lawyer and a fine man, and the Society is fortunate in having his services at its command."

## SOME MORE ARGUMENTS.

The last number of the program of the San Francisco County Medical Society presented for the consideration of the members, various arguments pro and con relating to the plan of dealing with industrial accident insurance adopted by the State Society. The first portion merely quotes the report of the Council dealing with this subject which report appeared in the June issue of the JOURNAL:

"The following are the arguments for and against the endorsement of the State Society's resolution, as drawn up by your Secretary to the best of his ability, after a careful consideration of all the evidence submitted at the various meetings and from written objections submitted by members, some of the latter being quoted verbatim as indicated:

I. FOR.

1. It must be remembered that the Boynton Workmen's Compensation, Insurance and Safety Act became effective January 1st, 1914. It is a law creating a condition which must be met.
2. The Industrial Accident Commission takes the stand that fees should be commensurate with the income of the individual and that charges should be made to the injured workman as if he had to pay the bill.
3. Doctors receive 100 per cent. of their fees.
4. The fees average greater than do the usual collections for this sort of work.
5. By the work of the State Society, the Industrial Accident Commission and the various insurance companies recognize the rights of an organized medical profession, in marked contrast to the non-recognition in other States and in Europe.
6. County medical societies will have the right to present a list of physicians who desire or are willing to do this work.
7. With the united profession, it will no doubt be possible for amendments to this Act to be introduced at the proper time.

II. AGAINST.

1. Lowering of fees by the Fee Bill.
2. Men who insist upon higher fees will not be employed.
3. Concentration of work in the hands of a few men.
4. Low fees for men coming under the Act, but who have larger incomes than the average.
5. The insurance companies should furnish malpractice insurance to the men doing the work and this should not be a burden on the State Society.
6. The county society naming men would lead to favoritism and disrupt the Society.
7. The only way to avoid the haggling about fees and to insure the employment of better men would be to substitute a hospital system, with a salaried staff, so that the interests of the hospital, patient, Industrial Commission and insurance companies are one, or to use the already established hospitals for this purpose, with State regulation or supervision.
8. That under the Act the employer has the right to dictate choice of physicians and that the free choice of physicians promised is a delusion and a snare.
9. This state is being 'made an experiment station for freak legislation.'
10. Free choice of physicians does not guarantee to the patient the services of surgeons most competent in this work.
11. County societies have not the legal right to establish fees that will bind all their members.

In reply to the above objections:

I. FOR.

1, 2 and 3 are obvious.
4 is conceded by almost every doctor.
5, 6 and 7 are essential.

II. AGAINST.

1. 'The fee bill we are considering is based upon an average income of one thousand dollars a year. This average includes employees at from three hundred to six thousand dollars a year. The editorial statement in the California State Journal of Medicine, May, 1914, page 168, that "it is a list of minimum fees appropriate for workmen earning not over $1,000 a year," is absolutely erroneous.

If the fee bill under consideration be adopted, it means the same low standard. The courts will take the fee bill as their standard in estimating the value of services and it will be practically impossible to obtain a judgment against a man having an annual income of six thousand dollars for any greater sum than would be paid by the same man if he came under the liability act. Thus, for instance, a patient comes for diagnosis and treatment and makes three office visits. During this time the physician makes a complete physical examination, including urine, sputum, blood, feces and stomach contents. Are his services only worth $4.00—$2.00 for the first visit and $1.00 each for the other two visits—and that for the man who earns six thousand dollars a year?

There is no reason why the fee bill need be adopted by our Society. Let those members who desire to work under its provisions do so for the class of cases which come under the Liability law. Some of our members have been making life insurance examinations for $3.00 instead of demanding $5.00, as advocated by our State Journal, and now we propose to still further reduce our fees.

W. I. T.'

In reply to the above:

'The California State Journal of Medicine is certainly in error if it states that the fee schedule tentatively adopted by the California State Medical Society "is a list of minimum fees appropriate for workmen earning not over $1,000 a year." The resolutions as prepared for submission to the State Medical Society indicated that that the fee schedule would apply to persons of an average yearly income of $1,000 per year.

The actual average earnings of all the individuals reported as injured from January, 1913, to date, in California, are $967.00 per year. The highest wage reported for that time of the more than 30,000 accidents was about $7,500 per year, and the highest paid man availing himself of the privileges of the Boynton Act received $3,500 per year in salary.

There is nothing to prevent the physician arranging with his patient for fees in excess of the fee schedule when the patient's income is in excess of the $1,666 adopted by the Boynton Act as the highest figure for purposes of awarding indemnity. Since the law takes cognizance only of a sum less than $1,666, so may the surgeon consider that his services under the fee schedule apply only to an injured individual with income up to that amount. It is his right to arrange with his patient for an extra fee to be commensurate with his patient's resources, since the Commission takes the stand that its fee schedule is designed to meet a $1,000 per annum income.

If the fee bill is adopted, why would it be more likely to be accepted by the courts as a standard fee bill than our county medical society fee schedule, which is not accepted by the courts, in some

instances at least? The Industrial Accident Commission states that the fee bill under discussion is for individuals of $1,000 annual income. If we apply that theory to this same fee schedule, note the result:

| Annual Income | *Surgeon's Minimum Fee for Major Operation Only | Extra Hospital Visit Minimum Fee | Extra Office Visit Minimum Fee |
|---|---|---|---|
| $1,000 | $ 75 | $ 1.50 | $ 1 |
| 2,000 | 150 | 3.00 | 2 |
| 5,000 | 375 | 7.50 | 5 |
| 10,000 | 750 | 15.00 | 10 |

* Note—This is the bare fee for surgeon. Assistant, anesthetic, etc., are paid extra.

It must not be forgotten, nor the fact ignored, in argument, that the fees shown in the schedule are minimum. More than average dressings command greater fees than shown on the fee bill, as do more than average operative procedures. Consideration of examination of urine, blood, sputum, stomach, etc., do not belong in this discussion because they will very rarely have place in an accident case, and if they do will most certainly be paid for in excess of the scheduled visit rate.

Physical examinations are rarely if ever required, and practically never made, unless asked for by the insurance company, in which event a special request and special arrangement is made and a fee stipulated. M. R. G."

2. This is absolutely true. Men who do not care to accept the fees do not have to do the work, and it is their privilege to refuse.

3. It is doubtful whether the work will be concentrated in the hands of fewer men than it is at present. Many corporations and business houses have employed physicians in the past to care for their employees, and in a large number of instances the employees act on the advice of their employers in consulting physicians for even ordinary cases of illness. As a matter of fact, from January 1st to May 1st, 1914, approximately 5,000 physicians in this State handled the 14,560 cases reported to the Industrial Accident Commission during that period. While there have been 14,560 accidents under the Boynton Act, about 1,000 of these have been insured in the State Compensation Insurance Fund.

Of these 1,000 cases, only two have required removal of doctor for incompetence.

4. It is true that there are men whose incomes are larger than the average who will come under this Act, but there is also a tremendous number whose incomes are far below the average and from whom physicians would ordinarily have collected nothing. For instance, one company alone handled 443 cases from January 1st to May 1st, 1914, the average fee paid to physicians being $10 per case. Of this number 200 were trivial and never would have consulted physicians in the first place had it not been for the protection afforded them by law. The average income of those who have come under the Act to date is less than $1,000.

5. There is no reason why the work done by our members under the Act should be any more liable to malpractice suits than that done in routine practice, for we assume that they will demand the same safeguards (X-rays, etc.) as they would in ordinary practice, and we know that the Industrial Commission and the insurance companies will certainly want this done and will pay for it.

Note—The Industrial Accident Commission requires X-rays filed in all bone cases.

6. The county society would only prepare a list of the men willing to do this work, copies of the same to be given to all interested parties, and there would be no dictation of physicians from this office.

7. The use of hospitals, it is true, may be a step in advance and may yet come. Nevertheless, the Industrial Commission has not seen fit to consider this plan in the very interests of the profession. If the latter acted on the usual unselfish motives which characterize most of its acts, and sees fit to endorse this plan, there is very little doubt that it can be carried out.

8. The companies have agreed to the free choice of physicians, the Industrial Accident Commission also. It is true that under the act the employers themselves may, if they choose, dictate the choice of physicians. After discussion with many of the large employers of this city, we find that they are all willing to allow cases to go to the family physician, provided the latter be competent; their only interest being to protect the injured and themselves in the matter.

9. There are twenty-nine States where workmen's compensation laws are in effect.

10. The free choice has only been granted because the profession has demanded it.

11. The societies are not trying to—it is up to individuals to accept or reject.

CONCLUSION.

It has been urged that this matter is not one for the county society; that any physician may do this work or not, as he sees fit. This, of course, is true; but if we wish to retain our unity and bring about changes in the Act itself so as to benefit the profession, we must take a stand now.

It must likewise be recognized that workmen's compensation is here to stay; that it is only a matter of time before we shall have sickness insurance, and if we are not prepared to crystallize our views on all of these questions we shall be absolutely helpless to meet these problems."

## GEORGE FREDERICK REINHARDT, M. D.

It is sad enough to see any one in the prime of life pass away, but when this happens in the case of a man of unusual and marked constructive ability, one who is adding to the development of good things and to the betterment of conditions affecting the whole people, it is indeed a calamity. It was work of this sort that was being done by Dr. Reinhardt in the University of California, at Berkeley, and his untimely death on the night of June 7th will be felt as a distinct loss to the University for many a long day to come. His work in the creation and development of the students' infirmary marked him as a man above most men and the thing that he created was seen to be good and has been followed in many universities. He was ill but four days and died from a profound infection consequent upon a carbuncle, in spite of every effort to save his life. He was 45 years old and while he had been born in Iowa, nearly all of his life had been spent in California, which he dearly loved. A man of rare common-sense and sound judgment and with a kindly heart and a sympathetic disposition that endeared him to all those with whom he came in contact, his loss will not soon be forgotten. He leaves a widow and two children.

Dr. George Frederick Reinhardt, Professor of Hygiene and University Physician in the University of California, whose development of the Infirmary system in the University, by which complete care was taken of the health of five thousand students, was an achievement memorable in the history of preventive medicine in America, died in the Infirmary on June 7, 1914.

Dr. Reinhardt's death was accidental in cause, and one of those martyrdoms in which a physician lays down his life in the service of others. For some weeks he had been giving surgical attention daily to a patient who was suffering from a carbuncle. Through some accidental mischance the same streptococcic infection established itself in the physician himself. A serious carbuncle formed, which was operated on at the Infirmary. The strain was, however, so virulent that surgical treatment and medical care were unavailing and after an extremely brief course death resulted. Bacteriological examination at the State Hygienic Laboratory showed the extreme virulence of the infection.

The funeral services were held the morning of June 9 in the garden of the University Infirmary, which stands as an enduring monument to the creator of its very idea. Rev. Albert W. Palmer of the Plymouth Congregational Church of Oakland and President Benj. Ide Wheeler of the University of California were the speakers at the services, which were attended by large delegations from the faculty and from the student body of the University, from various student and medical organizations, and by many hundreds of grateful and devoted friends. There were further services in private at the Oakland Crematory.

Dr. Reinhardt was born in Kansas on June 3, 1869. His boyhood was spent at San Jacinto and elsewhere in Southern California. He received the degree of F. S. from the University of California in 1897 after an undergraduate career in which he had played on the football eleven, served as football manager, and been a leader in student affairs. He then spent three years in the Medical Department of the University of California, receiving his degree of M. D. in 1900. From that time until his death he practiced in Berkeley with much success, and achieved much reputation as a surgeon. In 1900 he was appointed Medical Examiner and in 1903 Professor of Hygiene and University Physician in the University of California.

His most memorable contribution to University life in America was made in 1906, when he prevailed upon the authorities of the University of California to carry out the plan which he had for some time been maturing of establishing an Infirmary system—something theretofore quite without academic precedent. A well-equipped hospital was established on the University campus, and every student, in return for an Infirmary fee of $3.00 each half year, was given the privilege of all the medical and hospital care that the student might require. A staff of physicians was assembled, a corps of graduate nurses organized, under the superintendency of Miss Ethel Sherman, and a remarkable clinic developed. At the time of Dr. Reinhardt's death the daily average of bed cases had risen to ten, and the daily average of consultations and dispensary treatments to more than a hundred. For medical advice and hospital care there was no charge beyond the Infirmary fee itself. For surgical operations —and some fifty major operations and a large number of minor operations were performed every year—the student paid a moderate fee which went to the Infirmary fund and not to the surgeon. Dr. Reinhardt and the medical staff were remunerated by the University and there was no element of private gain in their relation to the Infirmary.

The Infirmary system proved a great blessing to the students of the University. What resulted was that students were kept well, instead of being allowed to become sick. Ailments received early attention, and numerous cases that might have involved long illness or death were made of little account by the fact of this early attention. A richly valuable educational part of the system was that the students were taught to take care of their health, to avail themselves of the resources of scientific medicine, and to avoid quacks and patent medicines, using instead competent medical advice.

For a dozen years, too, Dr. Reinhardt lectured twice each week, throughout the first half of the freshman year, to all the men in the freshman class, on the principles of public and personal hygiene. This instruction was exceedingly valuable in teaching the students some understanding of how to safeguard their bodily resources and the obligations of citizens in the way of right relation toward the problems of public health and community sanitation.

At one time Dr. Reinhardt served, most efficiently, as Health Officer of Berkeley. He was for years a member of the State Board of Medical Examiners, and for some time served as its president. In this capacity he made valuable contributions to the cause of proper standards for the practice of medicine in California.

A kindly and generous personality, enthusiastic and untiring in his service to every good public cause, self-sacrificing and unwearying in his service to other men, Dr. Reinhardt was of the noblest type of good citizen and good physician. His great invention of community care for University students has attracted wide attention throughout the country, has already been copied in the University of Michigan and the University of Wisconsin, and is certain to become a prevailing custom throughout the other great universities of the country.

Fitting tribute to his memory was what President Wheeler of the University set down on the night of Dr. Reinhardt's death, as follows:

"He was one of the most efficient, useful, and unselfish men I ever knew. To thousands of the students he has been their best friend. The Students' Infirmary is his creation. He furthermore developed therein the type of the college infirmary which meets the needs and can be maintained. This will be his lasting monument.

"Everyone who worked with him he cheered and stimulated. He gave of himself to every good cause unstintingly and without thought of remuneration. All his thoughts went out toward public service. We could not afford to have him go. On every side are the great gaps he has left. What shall we do without him?"

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## GEORGE FREDERICK REINHARDT, M. D.

It is sad enough to see any one in the prime of life pass away, but when this happens in the case of a man of unusual and marked constructive ability, one who is adding to the development of good things and to the betterment of conditions affecting the whole people, it is indeed a calamity. It was work of this sort that was being done by Dr. Reinhardt in the University of California, at Berkeley, and his untimely death on the night of June 7th will be felt as a distinct loss to the University for many a long day to come. His work in the creation and development of the students' infirmary marked him as a man above most men and the thing that he created was seen to be good and has been followed in many universities. He was ill but four days and died from a profound infection consequent upon a carbuncle, in spite of every effort to save his life. He was 45 years old and while he had been born in Iowa, nearly all of his life had been spent in California, which he dearly loved. A man of rare common-sense and sound judgment and with a kindly heart and a sympathetic disposition that endeared him to all those with whom he came in contact, his loss will not soon be forgotten. He leaves a widow and two children.

Dr. George Frederick Reinhardt, Professor of Hygiene and University Physician in the University of California, whose development of the Infirmary system in the University, by which complete care was taken of the health of five thousand students, was an achievement memorable in the history of preventive medicine in America, died in the Infirmary on June 7, 1914.

Dr. Reinhardt's death was accidental in cause, and one of those martyrdoms in which a physician lays down his life in the service of others. For some weeks he had been giving surgical attention daily to a patient who was suffering from a carbuncle. Through some accidental mischance the same streptococcic infection established itself in the physician himself. A serious carbuncle formed, which was operated on at the Infirmary. The strain was, however, so virulent that surgical treatment and medical care were unavailing and after an extremely brief course death resulted. Bacteriological examination at the State Hygienic Laboratory showed the extreme virulence of the infection.

The funeral services were held the morning of June 9 in the garden of the University Infirmary, which stands as an enduring monument to the creator of its very idea. Rev. Albert W. Palmer of the Plymouth Congregational Church of Oakland and President Benj. Ide Wheeler of the University of California were the speakers at the services, which were attended by large delegations from the faculty and from the student body of the University, from various student and medical organizations, and by many hundreds of grateful and devoted friends. There were further services in private at the Oakland Crematory.

Dr. Reinhardt was born in Kansas on June 3, 1869. His boyhood was spent at San Jacinto and elsewhere in Southern California. He received the degree of B. S. from the University of California in 1897, after an undergraduate career in which he had played on the football eleven, served as football manager, and been a leader in student affairs. He then spent three years in the Medical Department of the University of California, receiving his degree of M. D. in 1900. From that time until his death he practiced in Berkeley with much success, and achieved much reputation as a surgeon. In 1900 he was appointed Medical Examiner and in 1903 Professor of Hygiene and University Physician in the University of California.

His most memorable contribution to University life in America was made in 1906, when he prevailed upon the authorities of the University of California to carry out the plan which he had for some time been maturing of establishing an Infirmary system—something theretofore quite without academic precedent. A well-equipped hospital was established on the University campus, and every student, in return for an Infirmary fee of $3.00 each half year, was given the privilege of all the medical and hospital care that the student might require. A staff of physicians was assembled, a corps of graduate nurses organized, under the superintendency of Miss Ethel Sherman, and a remarkable clinic developed. At the time of Dr. Reinhardt's death the daily average of bed cases had risen to ten, and the daily average of consultations and dispensary treatments to more than a hundred. For medical advice and hospital care there was no charge beyond the Infirmary fee itself. For surgical operations —and some fifty major operations and a large number of minor operations were performed every year—the student paid a moderate fee which went to the Infirmary fund and not to the surgeon. Dr. Reinhardt and the medical staff were remunerated by the University and there was no element of private gain in their relation to the Infirmary.

The Infirmary system proved a great blessing to the students of the University. What resulted was that students were kept well, instead of being allowed to become sick. Ailments received early attention, and numerous cases that might have involved long illness or death were made of little account by the fact of this early attention. A richly valuable educational part of the system was that the students were taught to take care of their health, to avail themselves of the resources of scientific medicine, and to avoid quacks and patent medicines, using instead competent medical advice.

For a dozen years, too, Dr. Reinhardt lectured twice each week, throughout the first half of the freshman year, to all the men in the freshman class, on the principles of public and personal hygiene. This instruction was exceedingly valuable in teaching the students some understanding of how to safeguard their bodily resources and the obligations of citizens in the way of right relation toward the problems of public health and community sanitation.

At one time Dr. Reinhardt served, most efficiently, as Health Officer of Berkeley. He was for years a member of the State Board of Medical Examiners, and for some time served as its president. In this capacity he made valuable contributions to the cause of proper standards for the practice of medicine in California.

A kindly and generous personality, enthusiastic and untiring in his service to every good public cause, self-sacrificing and unwearying in his service to other men, Dr. Reinhardt was of the noblest type of good citizen and good physician. His great invention of community care for University students has attracted wide attention throughout the country, has already been copied in the University of Michigan and the University of Wisconsin, and is certain to become a prevailing custom throughout the other great universities of the country.

Fitting tribute to his memory was what President Wheeler of the University set down on the night of Dr. Reinhardt's death, as follows:

"He was one of the most efficient, useful, and unselfish men I ever knew. To thousands of the students he has been their best friend. The Students' Infirmary is his creation. He furthermore developed therein the type of the college infirmary which meets the needs and can be maintained. This will be his lasting monument.

"Everyone who worked with him he cheered and stimulated. He gave of himself to every good cause unstintingly and without thought of remuneration. All his thoughts went out toward public service. We could not afford to have him go. On every side are the great gaps he has left. What shall we do without him?"

## ORIGINAL ARTICLES

# FUNDAMENTALS IN TEACHING SEX HYGIENE.

By JOHN C. HOLLISTER, M. D., Pasadena.

Many references to teaching Sex Hygiene are to be found through recent literature. Books have been published, committee reports and personal articles have appeared in medical and pedagogical journals and in popular magazines. The need for such instruction is now so widely recognized that the question before us is not whether it should be done, but what is the best way to do it.

Most of the plans for introducing the subject into the home and school insist that the facts of human reproduction should be taught to the child by an indirect method. It is almost universally recommended that the child be taught botany or general biology only. The crucial facts of human reproduction he is expected to grasp intuitively. He is thus expected to learn the essentials of human sex hygiene without directly studying them.

This indirect method I believe to be quite wrong, wrong because it does not rest upon what to my mind are the fundamentals of sex education. To go still further—I think any indirect method fails to recognize what these fundamentals are, although when our attention is called to them, we find them particularly simple and self-evident. The fundamentals are not to be found in general biology or nature study; they are not plant or animal reproduction; they are not cells nor evolution nor life itself. They *are* human anatomy and physiology. Any plan that does not recognize the truth of this, any plan that does not rest upon these foundations, is inherently weak. It is unnatural, illogical, and has not a sound psychological basis.

If this be true, and, as will be shown later, there can be no doubt of it, we are forced to conclude that the child should have a satisfactory knowledge of human anatomy and physiology before he can appreciate the matter in sex education. The object of this paper is to call particular attention to this fact.

All authorities on the "Science of Sex," as one editor calls the general subject, base their knowledge upon human anatomy and physiology. That knowledge they could no more gain by exclusive study of botany, than the botanist could learn about plants and flowers if he confined his attention to the study of the human body. Yet that is exactly what most of the methods referred to expect the child to do. For a typical example let us consider the report presented by the special committee at the Fifteenth International Congress on Hygiene, at Washington a year ago.

In the third paragraph we read, "It follows from the above principles that detailed descriptions of external human anatomy are to be limited to what is necessary to make clear and to impress the hygienic bearing of the facts to be taught. In printed books and leaflets cuts illustrating human anatomy should be avoided whenever possible, and if used at all, should be limited to absolutely essential facts, and be conventionalized as much as scientific accuracy will permit." In the fourth paragraph we find the statement—"The purely scientific basis for such instruction must be laid in the biological nature study in elementary schools, and in the more systematic instruction in biology and hygiene in secondary schools and colleges."

General human anatomy and physiology are thus curtailed or denied entirely to the child, and general biology is offered him even up to his college course, as the fundamental basis upon which to build his sex knowledge.

The mistake of such a plan is not that it recommends general biology and nature study; the more biology and nature study the child gets the better. The mistake is that general biology and nature study are *substituted* for general human anatomy and physiology and used as fundamentals, in spite of the fact that human anatomy and physiology are just as purely scientific, and have a far more intimate and natural association with the child's earliest interests. To teach the child the unity of all life is of the greatest importance. Biological unity should always be shown to him clearly for, as soon as he grasps its meaning, his respect for all life will grow strong. But how can he be expected to grasp its significance to him personally unless he knows pretty clearly about himself? He cannot if he is denied knowledge of his own structure and normal functions. The committee's report not only advises placing the cart before the horse, as it seems to me, but goes further than that—it takes away the horse altogether. The child is expected to imagine, and thus learn about, the horse by exclusive observation of the wagon.

The fact that it is possible for such a committee to make such a mistake is clear evidence that, either consciously or subconsciously, they hold individually the same attitude toward certain scientific facts that they tell people not to hold, i. e., they feel ashamed of normal genital anatomy and physiology; or else they believe that there are difficulties or dangers in teaching a child genital anatomy and physiology. If they are ashamed, they have forgotten that the child is *not*. That attitude comes only after he finds out that it is the accepted one among his elders. If they believe there are dangers, they are, my experience has shown me, equally in error.

Other examples advocating the indirect method, are plans offered by Sigmund (quoted by Iwan Bloch in his "Sexual Life of Our Time"), by Bloch himself (*idem*), and by Maria Lischnewska ("Die geschlectliche Belehrung der Kinder"). These educators believe in substituting natural science for human anatomy as long as possible. Max Euderlin, in an article published in the "Zeitschrift fur Bekampfung der Geschlechtskrankheiten," bd. 4, makes the following statement: "Belehrung uber den Bau der menschlichen Geschlechtsorgane und den Vorgang der Zeugung sovie Erorter ungen uber geschlechts Krankenheiten sind aus der Volksschule ganz ausgeschliessen."

Even Havelock Ellis, the most scientific, the wisest, the most human writer on sex questions that has yet appeared, says: "There can be no

doubt that botany is of all natural sciences that which best admits of this incidental instruction in the fundamental facts of sex when we are concerned with children below the age of puberty." Again, "In modern times the method of imparting sex knowledge to children by means, in the first place, of botany, has been generally advocated, and from the most diverse quarters." In the same volume Ellis also makes this statement: "There can be no doubt, however, that while in the future the school will most probably be regarded as the proper place to teach the elements of physiology,—the introduction of such reformed teaching is as yet impracticable in many communities" (Psychology of Sex, vol. 6, p. 58).

If one could, in the average community, so thoroughly control each child that a systematic course in sex hygiene could be given from infancy up, and if all other sources for such matters could be shut out, then I should believe that the plan to teach botany or zoology first, and postpone human anatomy and physiology until late, might be advisable in certain children, that is, in those whose sex impulse has a tendency to develop *slowly*. I say "slowly" because, as will be shown, teaching botany exclusively is a direct irritant to the child's sex impulses.

Three practical facts show the unwisdom of Ellis' advice. One is that it is impossible to prevent the majority of children in an average community from hearing about sexual matters. Even the very young in most families understand much more of the references to such things overheard at home than their parents think they do. Often, in spite of the utmost care on the part of the parents, the child hears snatches from sex stories told by nurse, or servant, or playmate. He soon learns what they mean.

Another practical fact is that such influences stir up their curiosity about human anatomy and physiology, and not about botany. The third fact is that botany and zoology will not satisfy that curiosity, but instruction in anatomy and physiology *will*. We cannot doubt the value of botany but we can misapply it. The teacher should not forget that, while *his* attention in the class is more or less confined to his plants, the *child's* may be drawn to the distorted human anatomy story he has just heard out in the entry. The child's subconscious call is for the truth about human anatomy, and not for the facts of how flowers are reproduced.

I believe the essentials of the science of sex are human anatomy and physiology, and further, I believe these two subjects should be treated as essentials and taught to the child to-day at an early age.

But is this a practical thing to do? That it *is* feasible may be shown by discussion of the following four points:

(1) Human anatomy and physiology can be taught successfully to the young child.

(2) The knowledge of normal human anatomy and physiology is particularly advantageous to the child.

(3) There are no important reasons why the *genital* system should not be taught as part of general anatomy and physiology.

(4) Such a plan rests upon a sound psychological basis.

(1) One has only to teach a few children general human anatomy and physiology, including the genital system, to be convinced that it is not only possible but peculiarly fitting to do so. This applies to young children, i. e., between 5 and 10. Human anatomy and physiology are the very things that interest them most. They early notice, examine, and like to hear stories about eyes, ears, mouths, toes, and stomachs. The external genitals, the anus, and umbilicus, are equally interesting and in the same purely objective way. The intelligence shown by the average child of either sex, when the human organs are demonstrated by pictures, models, and actual structures, is remarkably keen. The ordinary boy likes to be taught about his own body, a girl no less so if taught early, i. e., before she has learned from the older girls to shudder at that "dreadful anatomy."

The younger the child is, down to four or five years of age, the more naturally and simply he takes in what is given him. Organs, nerve tracts, and human skeletons, he delights in, and, when they are explained intelligibly to him, he has no difficulty in identifying the various structures, and learning their exact names. The spermia, and ovia, and their relations to the formation of a new child, above all please him, and, what pleases him most, he remembers best. He frequently picks up his anatomical pictures in preference to his other picture books. His questions about anatomy and physiology are pertinent. He shows in many ways his eagerness to learn more. Unless it is taught mechanically, he does not tire of anatomy, especially if illustrated, one-half as soon as he does of spelling or figures.

The average parent does not realize this, but that is because he himself does not know his anatomy and physiology, or what he does know he cannot teach. The ignorance shown by many highly intelligent men and women concerning the most common facts of human anatomy and physiology is almost incredible. Especially difficult for the parent is the teaching of genital anatomy, but that is not the child's fault, nor can one blame the genital anatomy. The trouble is the average parent does not know his genital anatomy. He has always been ashamed to learn it even when the door was closed, for the feeling of disgust and aversion is deeply ingrained. What is true of the average parent is also true of the average teacher. It would be unfortunate indeed to have the next generation of parents so hampered when it is so unnecessary. One of the direct causes of the unhappy marriage is ignorance of the anatomy, physiology, and psychology of the genital system. It is quite impossible to expect intelligent and harmonious relations to persist under such conditions.

(2) There are *three special advantages* that come to the child who is early given a child's knowledge of human anatomy and physiology. First, he acquires a profound respect for his whole body. Second, the numerous obscenities he hears at school

or on the street do not disturb him. Third, he has no difficulty in appreciating the significance of what is told him later in his course on sex hygiene.

The respect for his body directly protects his external organs from vicious habits. This influence is specific in that it applies to the genital system more than to any other system, with possibly the exception of the muscle system. The same applies to the girl. She takes added care of her body, chewing her food well, not neglecting regular bowel movements and urination, etc. These are simple matters, but they indicate proof for the point under discussion, and their simplicity or commonness in no way detracts from their importance.

Does the same respect for his body come to the child if he learns only about plants and animals? It *can* not! Let anyone compare two small groups of children to be convinced.

The second advantage is this: We all know how many obscene remarks, references, suggestions, and pictures the child sees and hears in the school yard, school toilet or in the street. These vary in viciousness from a single expression to the secret note with its dire suggestion handed to the little girl by the "tough" boy, or the cherished pornographic card that this same "tough" boy delights in exhibiting behind desk cover or door. The average child's curiosity is particularly stirred by such pictures and notes. More than that, if he happens to be particularly timid and modest, he may be deeply injured, as will be shown later.

This is one of the particular times when it is the aim of the educator to help the child by sex enlightenment, but nearly all educators feel that they can help the child most by letting him fall back upon a knowledge of plant and animal reproduction, when his sex curiosity is thus aroused. To my mind no familiarity with plant and animal reproduction will help him half so much as will knowing about human reproduction, merely for the reason that the tough boy's remarks, and the obscene pictures are not about plants at all, and rarely about animals, but solely about *human* beings. Instinctively we know this to be true.

Let the child, before he sees the picture, or hears the remark, know more about human anatomy than the tough boy knows or the picture shows, and the chances are that his curiosity will become contempt, or, satisfied, will recede far back in his consciousness. Such contempt, or satisfaction of curiosity can not be induced by knowledge of botany even if profound, nor by any other subject but human anatomy and physiology.

The third advantage is this: If the child has already clear ideas of the structures and functions of his body he appreciates at once and without effort the instruction in hygiene that is to be offered him at puberty and later as part of his course in the science of sex. All questions of hygiene have direct reference to women and girls, men and boys; they are not about plants and animals. If it is quite impossible for an educated adult to understand sex hygiene or sex psychology at all unless he has a satisfactory knowledge of human anatomy and physiology, it is absurd to expect the child of ten or twelve, or even the youth of sixteen to do what the adult cannot do.

(3) The third point of our main discussion refers to the possible objections to the plan I have suggested.

The one objection of importance is the fear that there might be caused a too early development of the sex impulse in the child induced by the very act of teaching these subjects. There is a risk, but it is not a risk that depends upon anything the child thinks, or does, or the attitude he holds. It depends entirely upon the attitude the teacher holds and upon his handling of the subject. If human genital anatomy and physiology are taught as a part of general anatomy and physiology; if the genital system is not unduly emphasized by omission and concealment; if the genital system is not called "bad" and the other systems "good" we need have no fear that the child will become sexually precocious. Certainly not if all this is done before the sex impulse has had time to become strong. The reverse is true. There is no irritant like unsatisfied curiosity. Previous knowledge of the genital system satisfies this curiosity more naturally and specifically than any other kind of knowledge.

To consider it in another way: The child *must* be given some knowledge of his anatomy at puberty if he has not had it before. Does it not stand to reason that the anatomical pictures and physiological facts will have a far greater tendency to stimulate his sex impulses at the time when he already has his brain confused and agitated by the new and strange sex emotions that come from within and are entirely unavoidable, than it would before this emotional life had begun?

I do not advise attempting to explain to the child the psychology of the subject. He would not understand it if one did. Pathology, what he needs of it, had best come later when it will help him most. Perversions to a still later period, for they disturb through fear or sympathy. But knowledge of normal human anatomy is not a sexual stimulant. It acts more like a sedative. It is one of the most effective sex-impulse sedatives that we have. It is about the only direct one that we may use for children. There are effective sedatives other than this, but they are more indirect in action, as we shall see. Because the exact knowledge does act as a sedative, and thus tends to postpone the sex-impulse development, it should be given to the child and given in time. An acquired habit of taking such a sedative is by no means deleterious.

Occasionally we hear a further objection raised. This is that there are so few teachers and almost no parents that are able to teach the anatomy and physiology. That again is no fault of the child, nor does it argue that such a condition should persist indefinitely. The situation may be met practically by the school's assuming full responsibility for these subjects. If there is a dearth of teachers at first, the demand will soon call forth a supply. Another generation or two and parents *will* be able to teach their children and will not be ashamed to do so.

(4) The fourth and last point to be discussed

is whether or not we can place our ideas upon a firm psychological basis. Various well-known authorities upon the mental development of the child, and writers upon general psychology, have been read or consulted personally. A satisfactory amount of evidence was not hard to find. One answer that came to a personal letter I shall add to the end of the article.

In the first place I will quote a sentence from Wm. James. In his "Talks on Psychology" he says: "Theoretical curiosity about the rational relations between things can hardly be said to awake at all until adolescence is reached." Generally speaking, then, it is difficult for a child to take in much of any subject by intuition unless he is much older than the age under consideration. This argues directly for the fact that teaching human reproduction by means of plant and animal reproduction cannot at best be very satisfactory. It also corresponds to Herbert Spencer's law that we must begin with a child by teaching concretely; abstractly not until later.

Secondly, it might be well to emphasize the safety of our plan to teach a child his anatomy before he is eight years of age.

According to Moll, Ellis, and Sanford Bell, a child's sex instinct becomes conscious but very rarely before eight years of age. As Freud has so clearly shown in his papers on sex theories, the child may show even from infancy sex manifestations of various sorts, but they are subconscious. As a rule he is ten, or twelve, or fourteen, before he associates the subjective and objective sides of his sex development. Moll says: "The undifferentiated stage may begin at five, or possibly before, but more commonly later, not infrequently at the age of nine or ten. Ordinarily, however, the differentiation of the impulse becomes manifest at a later age—between the ages of fifteen and seventeen." Sanford Bell (*Am. Jour. of Psychol.*, July, '02), places the beginning of the second phase of child love at eight to twelve, to fourteen, when the infantile lack of self-consciousness changes.

On looking over the ten case histories Ellis gives (at the end of one of the volumes of "Psychology of Sex"), eight of which are of normal individuals, "one abnormal, one slightly so," I found that on the average, interest in sex matters began at nine years of age. The plan may be considered safe then, if the above figures are to be considered correct.

Thirdly, the change of method suggested would fit in nicely with what we know of instincts and their control by habits. As James so clearly shows in his "Principles of Psychology," there appears in every child a series of instincts more or less powerful, more or less useful, more or less essential. According to our notions of what is suitable many instincts are considered advantageous, many detrimental, to the child's welfare, i. e., sympathy, courage, constructiveness are encouraged, while fear, shyness, or jealousy, are discouraged. Then there are instincts of great value but cannot be allowed to develop uncontrolled. The instinct of propagation is of one of the last. It runs all powerful throughout all lower life. Plants and animals are completely under its control and follow its promptings as a matter of course. The human animal would do the same unless if he did not differ from the lower animal by having an intellect, and by allowing his intellect to control the primitive instincts. The woman's movement, and the great child's movement, have at their very centers control of the sex instinct by intelligence. The child must learn this control. That is why sex hygiene is given to children at all.

Among the ways of influencing the sex impulse is one of special importance. It is the *control of instinct by habit.* A further quotation from James will indicate what is meant. In his "Principles of Psychology," Vol. II, page 349, he says: "When objects of a certain class elicit from an animal a certain sort of reaction, it often happens that the animal becomes partial to the first specimen of the class on which it has reacted, and will not afterwards react to any other specimen." Then he says: "A habit once grafted on an instinctive tendency, restricts the range of the tendency itself, and keeps us from reacting on any other but the habitual object, although others might as well been chosen had they been first comers."

E. N. Henderson in "Principles of Education," has the same ideas but puts them in a somewhat different fashion. On page 103 he says: "When one becomes accustomed to react towards objects in a certain way the instinctive tendency to react differently will, if it appears later, very likely be inhibited." Then on page 105 Henderson says: "We have then the following phases in the control of emotion: (1) the substitution of contrary emotions habitually associated with its instinctive stimuli, (2) the substitution of habitual expressions for instinctive ones, (3) the inhibition of some instinctive expressions by emotions which they are trained to rouse. Under these conditions we may suppose that no emergency will excite a certain emotion unless in the nature of the case the vigorous effort that will hereby be stimulated is necessary. In that event, the first effect of the emotion will be a mild intellectual excitement with habitual activity under conscious control. Here emotion favors concentration of attention, presence of mind."

Now, if we apply these rules of psychology to the question we are talking about, it seems to me that the child would have not only a more natural control of his sex impulses, but a far more effective one, if he consciously or subconsciously referred, by a fixed habit, all new ideas stirring up his sex curiosity or instinct, at once back to the true knowledge of human anatomy and physiology he has already firmly placed on a solid foundation; yes, far more effective, than he would have were he obliged to refer them merely to a knowledge of plant or animal reproduction. The latter resembles the former in but the most general biological way. The latter would fail entirely to satisfy his curiosity, but even if it did not, it would refer him to conditions where the sex impulse runs wild with no effort at control. If the child could reason, as they expect him to, and draw his lessons from the

plant, would he not be placed directly upon dangerous ground! Here is where the true risk lies!

We feel at once how satisfactory the plan suggested would be to the child, how much real help it would give him. The plan of learning botany might lead to exactly the thing we are trying to avoid, namely, obedience of the child to the instinct. This fact alone is sufficient for an entire change of opinion by those advocating indirect methods. They *must* be wrong, and their plan must be doing harm constantly! Our common sense, the final judge of good pedagogy, tells us too which plan is the right one.

Fourthly and lastly, I wish to make one more quotation from James. On page 401 (*idem.*), we find: "Sexual passion expires after a protracted reign, but it is well known that its peculiar manifestations in a given individual depend almost entirely upon the habits he may form during the early period of its activity." This makes the proper management of the child's early sexual life of the highest necessity. It harmonizes with what Freud considers one of the causes of perversions. Freud argues that such abnormalities are to a large extent due to what he terms "wounds in the child's subconsciousness." Such "wounds" are caused by bad habits. Good sex habits are thus again found particularly desirable in as much as bad ones give rise to sexual disturbances that are serious and that may persist all through life. Good sex habits for a child are: respect for his body; respect for his genital organs; ambition to be clean, well, and strong; desire to be master of himself. Bad sex habits are: feeling of disgust in regard to his genital organs; enjoyment of obscenity; morbid interest in sex matters; onanism.

Now, to go back to our main subject, would not a simple but clear understanding of the way human sex structures are built, and what they are for, count more on the side of good habit-formation, than even a very complete knowledge of the sex cells of plants? The risk of wounding would, with no question of a doubt, be much less with the first. How vital it is then for natural, strong, intelligent habits to be engrafted early, so that the child may carry them all his life! If they are not natural, and intelligent, they will be careless and therefore vicious.

We are right then in saying that our plan is well founded psychologically, and also is in harmony with good pedagogical principles.

It might seem fitting to indicate here a practical plan for introducing the subject into the schools based upon the suggestions offered, but that would make the paper too long. Such a plan will soon be published by itself.

In conclusion of the paper, therefore, I feel justified in saying:

(1) The fundamentals of the whole subject of the science of sex are human anatomy and physiology.

(2) Direct and early teaching of human anatomy and physiology to the child is feasible and definitely advantageous, carries with it no valid objections, and is therefore highly desirable.

(3) The plan suggested in this paper has a firm psychological basis, and rests upon good pedagogy.

(4) Any method of teaching sex hygiene to children and youth that recommends the facts of human reproduction to be taught indirectly is not only defective, but it directly opposes the formation of the best sex habits, lessens the child's ability to control his sex impulses, and, finally, adds to his chances for some later perversion.

"Eugenics occupies the center of human interest to-day. All other subjects are mere satellites swinging about this interesting problem. In order to throw any light on this subject, it will be necessary to compare the two distinct groups in biology, the instinctive and the rational.

"In the instinctive group are placed botany and zoology. The habits in plant life are not only a matter of instinct—fixed and mechanical—but they have not the power of mobility. In this sub group there are male and female, yet propagation is not brought about by the sex relations as we understand them in the human family.

"In zoology the habits are just as fixed, just as mechanical, so far as all appearances and purposes are concerned, just as purely instinctive as in the group of botany, except that mobility is included in this group. The moment the beetle, the ant, and the bee, which stand at the head of the insect group as the highest types of instinct, are ushered into life, they enter their work without instruction, manifesting absolutely the same habits in their youth that they do in their old age. Animal life, like insect and botanical, has its habits fixed in a permanent groove. The periods of sex relations are fixed, there are none of the higher habits of wedlock, no psycho-physiological discriminations in the intermarriage of relatives. These groups are actuated in all their habits by the instinctive law of natural selection.

"Standing at the head of biology is the anthropological group, the members of which are recognized as superiors only in so far as they can master or utilize their instincts by the application of will through the medium of rationalism. The fighting instinct illustrates this. Although both have the fighting instinct, the civilized man is superior because he has studied tactics, has modern implements of warfare, and has learned the difference between bravery and courage. In other words, he annihilates the savage because he has rationalized his fighting instinct through training and study.

"Take the instinct of self-preservation. Of two groups in an epidemic the one relying upon instinct would not preserve life as long as the one that has studied about infections.

"Take the instinct of the preservation of others. It is the man upon the bridge of the ship to whom the passengers and crew turn in case of emergency, not because they depend upon his instinct, for they have that equally, but because they depend upon his rational act for preservation. It is proverbial that a crisis in a nation must either bring forth leaders that are equal to that crisis or the nation much perish. It is quite true that the law of self-preservation, relatively speaking, is primal, and the law of preservation of others is secondary, yet in whatever field, or in whatever circumstances they may be expressed, they are carried to their highest fruition not through instinct, but through rationalism. Rationalizing these instincts has been brought about by direct study and not through analogy.

It is the fact that he is assailed by the psychic current of the superior people that annihilates the aborigine. He is moved through the line of least resistance when his curiosity is aroused. He has not the necessary rationalism to sustain himself (Le Bon, "The Crowd," and Ross, "Social Psychology").

The savage is analogous to the boy with no defi-

nite knowledge of physiology. This boy, like the savage, is left in the field of curiosity and feeling subject to the vicious tendencies of the mob. The mob tendency indicates a morbid field. There is little or no resistance."

Personal letter from LORAN S. WALKER of Los Angeles, California.

## TREATMENT OF GENERAL PARALYSIS OF THE INSANE.*

By C. W. MACK, M. D., Assistant Physician, Agnews State Hospital, Agnews, Calif.

Psychiatrists have long looked upon general paralysis of the insane as incurable. When supplied with such facts as the duration and character of the onset in a given case, they could almost predict the time of fatal termination. In the hospitals for the insane these patients rapidly pass from the receiving service to the infirm wards where they go through the stage of slow dissolution as paralysis ensues and the mind loses all but a faint trace of former activity. To see a person in the prime of life suddenly stricken with this disease should call forth our best endeavors to arrest its progress. The utter helplessness of these cases and the limited means at our disposal almost checks our enthusiasm, but, thanks to diligent workers, the outlook for the future is more encouraging.

Paresis furnishes a large percentage of the admissions to hospitals for the insane. The writer has not had access to complete statistics, but has referred to the biennial reports of Michigan institutions on account of having some familiarity with the work done in that state. During the two years ending June 30th, 1912, there were 2580 admissions to the four Michigan asylums, and of these 8.8% were cases of paresis. These figures are fairly correct because most of the diagnoses are made upon laboratory findings. Dr. Christian, in the report of the Pontiac State Hospital, gives a somewhat higher percentage for the institution, and states that the percentage of cases of paresis admitted has more than doubled in the last ten years. Also in the same institution this disease is responsible for the greatest number of deaths. Further investigation is necessary before concluding that the disease is becoming more prevalent. The figures given, however, convince one that it is of considerable importance, and a search should be made for some efficient method of treatment.

The pathology is quite well known to the members of the society; but a few brief statements may not be amiss in order to appreciate more fully the therapeutical principles. The disease involves the spinal cord, brain substance and the meninges. It is a diffuse, destructive process resulting in a grave alteration of the cellular structure of the brain. The pia shows a chronic inflammatory reaction with adhesions to the cortex; the neurones undergo degenerative changes, eventually being destroyed and replaced by proliferation of the neuroglia; the blood vessel walls are thickened and the parilymph spaces packed with lymph cells and plasma cells. The greatest alteration of the cortical cells is in the neighborhood of the blood vessels.

The lesions in the central nervous system have been ascribed to the toxins of early syphilis and not considered an active syphilitic process. Recently, Noguchi and others have found the spirocheta pallida in the cortex of dementia paralytica, both post-mortem and by brain puncture. It is quite possible that these organisms are able to invade the brain because of the injury produced by the long standing infection, but even so, the presence of the spirochetes in the cortex is responsible for the inflammatory reaction producing the clinical picture of paresis. The spirochetes are found deep in the cortical substance away from the blood vessels, making it difficult to reach them through the blood stream, on account of the cellular infiltration of the blood vessel walls. If there was some way to increase the permeability of this bearer so that bactericidal substances could come in contact with the spirochetes, the solution of the problem would be easier.

The constitutional treatment deserves mention before describing specific therapy. The pathology of the disease makes evident the fact that it is a grave toxemia if not a direct infectious disease. Not only the brain but the other viscera show the effects of the toxic process. Patients afflicted with such a condition require special treatment with attention directed to raise the bodily resistance just as much as cases of typhoid fever. The toxemia is indicated by the muscular weakness and nervous symptoms which in the early stages often lead to the diagnosis of neurasthenia. There is need for the restful life, careful nursing and daily medical attention to conserve the recuperative powers, and this can only be insured by institutional care. The startling mental features in these cases usually force upon the friends the necessity of commitment, but unfortunately oftentimes not until the disease is well advanced. The damage to the brain has occurred before the physician has an opportunity to prevent it in the early stages. Is it not possible that institutional physicians too hastily relegate these cases to the background of incurables where they receive only routine treatment? A paralytic, apparently undergoing rapid decline, will sometimes improve, gain in strength and show a return of normal mental life lasting a number of months. Such remissions are not uncommon and surely indicate that under some conditions the reparative processes of the body are capable of arresting, temporarily at least, the destructive lesions. The proper use of resources at our command can aid nature in bringing about a greater degree of resistance if careful attention is paid to the constitutional treatment of these patients.

The advent of the Wassermann reaction has demonstrated the relationship between syphilis and paresis and the finding of the spirocheta pallida in the brain gives an indication for specific therapy. Thus far mercury and potassium iodid have had no influence upon the disease, and permanent results have not been obtained with salvarsan given intravenously. This failure can probably be ex-

* Read before the Santa Clara County Medical Society, February 4, 1914.

plained in the light of the pathology of the disease. The blood vessel walls do not permit the passage of medicinal agents or antibodies into the cortex. It has been shown also that substances introduced into the blood stream do not reach the cerebrospinal fluid. This has led to the use of the cerebrospinal fluid as a medium to convey the curative agent to the seat of the disease; or in other words, subdural injections.

Swift and Ellis, in 1912, introduced the intraspinous injection of salvarsanized serum in the treatment of tabes and its use has been extended to paresis and syphilitic brain disease. The method in brief is as follows: One hour after the intravenous injection of salvarsan, blood is withdrawn from which 12 cc. of serum is collected. This is diluted to 30 cc. with normal salt solution, heated for one-half hour at 56° C., and then injected subdurally between the third and fourth lumbar vertebra. The serum is injected by gravity after the withdrawal of an equal amount of cerebrospinal fluid. These injections are repeated at intervals of two weeks. This procedure has brought forth favorable reports from several sources. As yet, however, enough time has not elapsed to determine its true value, but the results obtained are very promising.

It will be interesting to know the mode of action of the salvarsanized serum when injected subdurally. There are several factors to be considered. The salvarsan itself and the serum with its antibodies, complement and protein splitting ferments. All of these come in contact with the pia, if not absorbed into the cortical substance. Heating at 56° C. probably inactivates the ferments and complement. As for the germicidal action of the salvarsan, it can be said that the original dose given intravenously is very much diluted. The 12 cc. of serum represents but a small part of the total quantity, and this is again diluted when injected into the cerebrospinal fluid. Even with this high dilution, it may be able to destroy the spirochetes. Ehrlich's original assertion was that salvarsan had a chemical affinity for the spirochetes, causing their destruction. The effect of the salvarsanized serum may be due to substances formed in the blood serum and not to the salvarsan itself. The salvarsan in the blood could inactivate the organisms in some other part of the body so that protective ferments would be formed for their parenteral digestion. These immune bodies would then be found in the blood stream, and their injection into the cerebrospinal fluid would be the same as producing the passive immunity by antitoxin. Blood serum without salvarsan is not efficacious. This is proven by a comparison of series of cases under treatment with two cases treated with heated and unheated serum alone. The two controls showed no change aside from what might be expected during the ordinary course of events.

The administration of salvarsanized serum was begun at the Agnews State Hospital four months ago. Twelve cases are now under treatment, making a total of thirty-five injections. The first few cases received 40% serum, while a 50% serum has been used with the later ones—going on the supposition that if a little medicine is good more is better. This increased dosage has produced no ill effects and in one case brought about a prompt drop in the cell count; in fact, the lowest in the series. Some of the early cases have shown enough improvement to deserve comment. One has been discharged very much improved and another sufficiently improved to be paroled, and a third case is much better mentally.

Although all of the cases have not shown a better mental condition since the treatment, there have been changes in the cerebrospinal fluid which are very encouraging. The cell count and the albumen content are a good index of the inflammatory process and give us a means to check up the results. In every instance there has been a pronounced drop in the cell count and in three cases it has returned to normal. At the same time there has been a decrease in the amount of albumen in the fluid. The Wassermann reactions have been made normal in only two cases, but this reaction may be influenced by further treatment.

It cannot be expected that any method of treatment will restore a brain whose cellular elements have been damaged and lost any more than the cavities in a tubercular lung can be replaced with normal lung tissue. If the disease process could be arrested there would still remain some mental defect. The treatment of these cases in the early stages is necessary to obtain the best results. No progress can be made until the disease is studied in the early stages, and this must be left largely to the general practitioner, as these cases are usually not referred to hospitals for the insane until every other means has been exhausted. Now that laboratory methods of diagnosis have been perfected it is comparatively easy to recognize paresis. The differential diagnosis between paresis and cerebrospinal syphilis is difficult and cannot be made upon the laboratory findings alone, but the indications for treatment would be much the same in each case.

The writer does not believe that a too radical statement is made when it is said that every patient with mental trouble should have a cerebrospinal fluid examination. The Wassermann blood examination is not sufficient as a somatic syphilis may be present with any form of mental trouble without syphilitic involvement of the nervous tissues. The cerebrospinal fluid very early gives an indication of the invasion of the central nervous system by the syphilitic process and may be discovered before the advent of mental or neurological symptoms.

The value of lumbar puncture is strikingly revealed by a case now under observation. A boy, twenty-one years of age, with a history of a chancre two years ago, and a mental disturbance extending over four years, came to the hospital in a state of maniacal elation. There was a flight of ideas, distractibility of attention and motor restlessness. These, with a history of recurrent attacks, would lead one to believe that we were dealing with manic depressive insanity, and that

syphilis was only incidental. A lumbar puncture disclosed a high cell count and a positive Wassermann reaction in the fluid. It may be an organic brain disease added to a functional psycosis, but without the fluid examination, the luetic involvement of the central nervous system would have passed unnoticed.

Some mention should be made of prophylaxis. The surest way to prevent general paralysis of the insane is to cure syphilis during the primary or secondary stage. With the refinements in laboratory diagnoses an involvement of the central nervous system during the secondary state of syphilis can be detected in a certain percentage of cases. When this occurs the organisms may only damage the nervous tissues without setting up an active syphilitic brain disease, but the tissues have become predisposed to the infection and it may light up again after a number of years in the form of paresis. If every case of syphilis could be treated thoroughly and followed up with cerebrospinal fluid examinations, this complication might be prevented. Those cases showing positive fluids could be given more intensive treatment. If salvarsanized serum is proven to be beneficial in combating syphilis of the central nervous system, this method could be resorted to whenever the fluid shows a positive reaction. Such cases could also report for lumbar puncture, and be given special directions in regard to the life they should lead to prevent the inception of syphilitic brain disease. There is reason to believe that alcohol is particularly injurious, and, not only makes the treatment of syphilis difficult, but renders the individual more liable to the cerebral manifestations of the disease.

The writer has attempted to give a résumé of the present status of the treatment of general paralysis of the insane without any claim, however, for completeness. Inasmuch as the disease is really a late manifestation of luetic infection, the future history of primary and secondary syphilis treated with salvarsan will be awaited with interest. If it does not bring about the desired result, let us hope that further studies of the pathology, immunity reactions and activities of blood ferments will reveal some way to meet these complications when they arise. The employment of salvarsanized serum may not satisfy all requirements, but, at least, it opens the way for further investigation.

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## ON THE SWIFT-ELLIS TREATMENT OF CEREBRO-SPINAL SYPHILIS.*

By PHILIP KING BROWN, M. D., and W. T. CUMMINS, M. D., San Francisco.

Neither mercury and iodide nor salvarsan intravenously have succeeded in bringing dependably satisfactory results in the treatment of certain syphilitic lesions of the central nervous system and especially not in the parasyphilitic states of tabes and paresis. The growing knowledge of how small an amount of any curative agent as administered ordinarily is excreted into the cerebrospinal fluid,[15] and the brilliant results from the use of anti-meningitis serum applied locally, make it reasonable that a furtherance of the intra-spinal method may produce satisfactory results in cases of syphilis of the central nervous system resisting ordinary treatment. The spirocheticidal action of salvarsan and the blood serum of recently salvarsanized patients has been demonstrated.

Meirowsky and Hartmann[1] showed that such blood serum had definite therapeutic value when used subcutaneously in patients with lues. Swift and Ellis show[2 3] spirocheticidal action of such serum on the spirochetes of relapsing fever, and they also call attention to the highly irritating effect of even small doses (0.1 of a milligram of salvarsan or neosalvarsan) injected into the spinal canals of monkeys. Wechselmann[4] produced convulsions, paralysis and death in two to four days in rabbits and dogs injected intraspinously with 1 mg. of salvarsan.

Plant[5] refers to the spirocheticidal action of the milk of women treated with 606, but regards the benefit to the children to be due rather to the transfer of immune bodies and warns against hoping for cure except by use of the remedy directly. He also reports favorable improvement of cases of tabes, syphilitic paralysis, etc., from subcutaneous injection of salvarsanized serum.

Gibbs and Calthrop[6] report the favorable result of five or six subcutaneous injections given five days apart, of ten to twenty c. c. of serum from a cantharides blister of patients treated four days before with salvarsan 0.4 gm. intravenously. The lessened Wassermann and general improvement were equal to their experience in cases treated directly.

Gondor[7] reports spirocheticidal action of salvarsanized rats' blood on spirochetes of relapsing fever.

Castelli[8] shows similar action of dilute neosalvarsan on various spirochete.

This establishes definitely the fact that the salvarsanized serum is certainly efficient and suggests the danger of even minute doses of the drug itself injected intraspinously. Reports, however, of the danger of this latter method are still conflicting, but a general deduction may be made from Swift and Ellis' report of experiments on monkeys, as well as authentic reports of trials on human beings, that the method of direct injection of the drug is very dangerous. Wolfsohn in a personal communication reported .007 gm., or about 1-100 of an ordinary dose of 606, administered intraspinously at the Johns Hopkins Hospital with death of the patient after two days of great agony. The cord was edematous and the meninges deeply injected. Swift and Ellis[9] report a case of tabes injected with minute doses of 914 with temporary retention of urine and severe lightning pains. Wechselmann reports[10] injecting neosalvarsan intraspinously in two paretic adults and two congenitally luetic children with no bad results. One of the paretics got .003 neosalvarsan at the first injection and .001 at the second injection two weeks later. The other paretic got .005 of neosalvarsan also with no bad effect. The children got from .001 to .0015 and they, too, suffered no reaction.

Marinesco[11] on the other hand reports using

* Read before the Fresno County Medical Society.

intraspinously .005 in 4cc of solution in thirteen patients. Ten had immediate severe symptoms and eight had prolonged bladder trouble with incontinence or retention, three had weakness of the extremities and one had anesthesia of buttocks, legs and rectum. In cases of cerebral lues treated intraspinously with serum from other patients after salvarsan injection some improvement resulted. Robertson [12] attempted the treatment in paresis with the serum of luetic patients who had received salvarsan three days previous to the withdrawal, also with serum from the patient himself withdrawn one hour after intravenous injection of salvarsan. Some improvement was noted. Swift and Ellis [13] report the results of a two years' experience with a series of cases selected from groups under this treatment. Their technic consists in administering salvarsan intravenously, withdrawing 40cc of blood one hour later directly into bottle shaped centrifugal tubes and centrifugalizing after coagulation has taken place. The following day 12cc of clear serum is removed by pipette diluted with 18cc of sterile salt solution, the whole heated to 56° C. for one-half hour in a water bath to increase the spirocheticidal action [8] and destroy the inhibitory substance contained in normal unheated serum. After lumbar puncture and the withdrawal of cerebro-spinal fluid until the pressure is reduced to 30 mm. the warm serum is introduced into the subarachnoid space by attaching a funnel and tube to the needle already introduced into the spinal canal. They call attention to the frequency of a certain amount of pain beginning a few hours after injection, especially in tabetics. For this pain they recommend phenacetin and codein or morphin if necessary. Our experience teaches us that the technic is not easy or devoid of the likelihood of complications, but of this we shall speak later. Their report includes ten selected cases—eight of tabes dorsalis, one cerebro-spinal syphilis and one tertiary syphilitic meningitis (radiculitis). Some were treated with their own salvarsanized serum and some with serum from other patients. The number of injections varied from four to fifteen, generally given two weeks apart, and with serum after the intravenous injection of 0.2-.5 gm. of salvarsan or slightly larger average doses of neosalvarsan (0.6-0.9 gm.). There was no special improvement in one of the tabes cases or in the meningitis case but a general disappearance of the pleocytosis and Wassermann reaction in the cerebro-spinal fluid and a marked improvement in pains and gait in the others.

Boggs and Snowden [14] report tabes cases treated by this method, modified only by the use of full doses of salvarsan or neosalvarsan in each case, and by injecting the serum undiluted. Their most constant result was the disappearance of the lightning pains and sensory disturbances. The effect on locomotion was slower but definite. They ascribe some advantage to use of undiluted serum and large doses of salvarsan.

Our experience has been with a series of cases representing a varied range of syphilitic disorders, one hemiplegia, three tabes (two preataxic), one ataxic paraplegia (cerebrospinal lues), one myelitis and two cerebro-spinal syphilis. In addition a spastic paraplegia with sensory disturbance was given an intraspinous treatment by the interne through a misunderstanding. The case is mentioned because of the entire absence of findings of syphilis in blood and spinal fluid (cell count 0) and yet the remarkable relief of the pain and spasticity for weeks after the treatment. We have dealt successfully with a large group of hemiplegias in syphilitics with pleocytosis and positive Wassermann in the cerebro-spinal fluid; but all, except the one included in the group reported upon, had never received any treatment for the syphilis at all and the improvement could not be made to speak comparatively for the special efficiency of the Swift-Ellis method. All the others had been treated at some time with mercury, iodides and 606, but were permanently invalided by their infirmities except one preataxic tabetic whose crises were his chief complaint. One of the other tabetics was a woman with so marked an ataxia and such severe pain that she was bedridden and had been uninfluenced by four intravenous salvarsan injections and a course of mercury and iodide. The remaining tabetic had a bad Charcot joint and very marked analgesia, especially in his legs. The following brief histories and summaries will show the results of the treatment:

(1) Syphilitic hemiplegia—Philip N., age 29, an inmate of the hospital two years; complains of complete right-sided hemiplegia for two years, during all of which time he was confined to bed.

Examination shows no apparent anesthesia. Reflexes on right increased. Left inguinal lymph gland enlargement. Babinski right side. Pupils equal and react to light and accommodation. Tongue protrudes to right. Slight tremor. Paralysis of right pharyngeal wall. Complete motor and sensory aphasia for months after entrance. Had learned to copy printing and to recognize a few objects. Could say yes and no and could swear proficiently. On entrance he had had repeated courses of mercury by inunction or hypodermically. Wassermann blood ++. Cell count 108. Noguchi +. Nonne +. C. S. Fluid ++++.

As the patient had had off and on for two years treatment with mercury and iodide and several injections of 606 with no benefit and apparently not influencing at all the Wassermann reaction on his cerebral spinal fluid, he was given the Swift-Ellis treatment. A full dose the first time very markedly depressed him for twenty-six hours, but he required nothing for pain. Within a few days there was a striking improvement and in a week he was walking with a crutch. A second treatment one week later produced no disturbing reaction and the efforts at retraining him in the hopes of overcoming some of his aphasia repeatedly failed in before, produced now very marked results. While the outlook is not brilliant the fact that his cerebral spinal fluid is still positive gives us a hope that further treatment may improve him still more. The improvement has already removed him from the class of total dependents, as he is able to care for himself.

Case 2—Preataxic tabes with Charcot joints; denies lues: A. B., age 63, complains of lightning pains; awkward gait; injury to ankle on August 31, 1913; was painless, but (Charcot joint) showed marked deformity.

Examination shows analgesia and diminished sensation to heat and cold. Argyle R. pupils. No crises. No ptosis. No knee jerk. Marked Romberg. Lightning pains. Bladder crises. No ataxia. On September 25th Wassermann blood —; C. S.

F. ++. Cell count 32, October 7th. C. S. F. ++. Swift-Ellis treatment 30 c. c. 40% serum. No pain from it. October 10 C. S. F. +++. Nonne —. Butyric acid —. Cells 3.

Swift-Ellis treatment was accompanied by no reaction whatever on two occasions. The Wassermann on the spinal fluid was increasedly positive after the first injection. The cell count fell from 32 to 3. A further painless fracture occurred on his alighting from a car and the necessity of his lying on his back has prevented further treatment. The case is interesting on account of the possibility of showing an arrest of the trouble. In the meantime there is gain in sensation and the crises are fewer and less severe.

Case 3—Preataxic tabes dorsalis; lues when 24; I. B.; age 68.

Complains of four years of progress of dim vision, unsteady gait, pain in spine and extremities. Examination shows no very definite Romberg. No Argle Robertson pupils. No change in knee jerks. No incoordination. No girdle sensation. No lightning pains. No crises. Absent ankle jerks. Relative analgesia. Unequal pupils. Cells 14. Wassermann C. S. F. ++. Wassermann blood —. He has been taking medicine from Stanford medical clinic for two months.

The patient was referred from the clinic to us in fairly good health, although he had tuberculosis of the lungs. He had a tremendous reaction after the intravenous injection of 606 and apparently developed a pneumonia from exposure while he was perspiring. This was not recognized by the interne and his chill was supposed to be from the 606 injection, so that an intraspinal injection was made on the following day. The patient died three days later with pneumonia. The autopsy by Dr. Ophüls revealed the fact that the spinal canal was bacteria free and showed no signs of irritation. The case was specially important as indicating the care with which the patient should be watched and dealt with following any severe reaction such as occurred in this case.

Case 4—Tabes with marked ataxia: Mrs. R., age 46, complains of lues 20 years ago. Tabes of eight years' standing with distressing pains. Marked incoordination of the lower extremities obliging her to use two crutches. Four intravenous injections of 606 brought about no improvement. Patient almost bedridden. Two Swift-Ellis treatments were given, with apparently little discomfort and with marked improvement in the lightning pains and gait so that the patient could walk a little without crutches.

Case 5—Syphilis, cerebrospinal ataxic paraplegia: F. B., age 30, occupation clerk. Complaint, patient got a chancre in August, 1908. About one month after appeared a copper colored eruption, then in about three weeks mucous plaques in mouth. Hair started to fall out and he became very bald. Finger nails and toe nails were also affected. Mucous plaques disappeared as did also the eruption with the use of mercury and a mouth wash. About four months after the chancre the patient fell out of a chair, paralyzed in all his limbs. The next day he noticed he had no control of his bowels. At only one time, however, was control lost of his urination. Patient lost fifty pounds in about two months. He could only walk in a staggering manner and would fall down after a few steps if not supported. For about three weeks patient was unable to speak, then became able to speak with difficulty. Became very emotional after the paralytic attack. Every night after the attack had two or three "night emissions" (patient states that for about one year before the paralytic attack he had "sexual intercourse" three or four times a night nearly every night). The night emissions were relieved after two months by the use of bromides. Patient claims that if he stops the use of bromide for even one night he gets a "night emission." For about two months after the paralysis the patient was confined to bed, then got up, but would stagger around the room and felt as he walked that he was walking on glass. He had very bad headaches, which were relieved with medicine (mercury and iodide). He never had any dizziness and no pains elsewhere than in the head. Still has poor control of bowels, but has frequent attacks of diarrhea. Since the use of drugs patient says speech has greatly improved and he is not so emotional. Walking has improved, but he still feels as though he were walking on glass. Chief complaint is partial paralysis and staggering. No shooting pains down legs, no girdle sensation, no dizziness. Poor control of bowels. Appetite good.

Family history, negative; past history, had gonorrhea eight or ten times, also gonorrheal rheumatism.

Examination—Eyes—Normal reaction to light and accommodation; tongue and mouth normal. Heart—Action accelerated, but sounds normal. Skin—A few scattered papules and vesicles; nothing diagnostic of lues. Lymph glands—Post cervical, inguinal and submaxillary glands palpable. Superficial reflexes—Subnormal in reaction; cremasteric very faint. All deep reflexes increased; patellar clonus and ankle clonus both present; muscular sense normal; tactile sense normal; pain and temperature senses normal. In November, 1911, the records of the University Hospital show that an examination of his optic fundi showed signs of an old or receding optic neuritis. The larynx showed evidences of a violent inflammatory laryngitis at some previous time. His difficulty in speaking was not due to the laryngeal condition, which could only account for the slight changes in the tone of huskiness. Heart, lungs and kidneys were normal. Patellar, Achilles, abdominal, jaw, triceps and corneal reflexes were all present. He had a marked Romberg; Oppenheim negative; jaw and triceps were particularly lively. He had patellar and ankle clonus.

Patient was analgesic on the left half of the dorsal surface of his trunk, above the twelfth dorsal vertebra and on the left half of the trunk in front. He was hyperesthetic over a girdle area about four inches in width around the trunk below the last rib. He showed analgesic areas on the outer sides of both legs. Heat and cold were apparently normal. The sense of smell was diminished on the right side; there was a ptosis of both upper eyelids and an overacting frontalis muscle. There was partial paralysis of the right facial nerve. Taste was better on the right side than on the left. Uvula was dislocated to the right.

He was given salvarsan .6 gm. on December 18th, 1911; .3 on January 1st, 1912; .4 on January 8th; .3 on January 17th, and had about seven injections of bichloride of mercury. Patient had a diarrhea when entering the hospital, which was soon controlled with bismuth subcarbonate. When he left the hospital he was receiving thirty drops of potassium iodide daily. When next heard of he was in the Alms House, not improved in gait, markedly emotional and weak. He had had about thirty small intravenous injections of 606, with no benefit. Referred to Polyclinic Ward, C. and C. Hospital.

Following the first Swift-Ellis treatment, which was without discomfort, patient stated that for the first time in years he was able to walk with a normal feeling in his feet. He was greatly encouraged and anxious to continue the treatments. The second injection of 606 was successfully given. The spinal fluid was withdrawn for examination on the same day with great difficulty by the interne. The preparation of the serum, which was withdrawn as usual, was done in the same way, and I made the intraspinal injection myself the following morning, entering the canal without incident. Within twenty-four hours it was evident that the patient had developed a septic meningitis and a staphylococcus albus was found in the cerebrospinal fluid. Whether this was introduced by the needle's entering an old puncture wound or whether the serum had become

infected in the process of preparation will never be known. That a grave danger is certain to arise from any break in the technic is certainly shown by this case.

Case 6—Wong Gee Sui, denies lues, age 57, complains of sudden onset of flaccid paralysis of both legs. Bedridden for four years. Examination shows ptosis of the right eyelid. Paralysis of the right anterior rectus. No incoordination of the upper extremities. Marked incoordination and ataxia in lower extremities. Reflexes absent in knee and ankle. A. R. pupils. On the 29th of December, 1912, Wassermann blood —. September 2, 1913, Wassermann blood +. C. S. F. +. Cells 45. Nonne and Noguchi +. Two Swift-Ellis treatments following a failure by any previous efforts to produce any improvement resulted in slightly more control of the lower extremities, but this was not regarded as sufficient to warrant continuing the treatment.

Case 7—Cerebro-spinal lues, recurrent sarcoma. Charles G., age 47; entered June 26, 1913. Complained of vomiting spells. Ringing in ears for three months at time of entrance. No headache.

Examination showed nystagmus and optic atrophy. Pupils equal and react to light and accommodation. Scanning speech. Incoordination in upper extremities and tremor resembling intentional tremor. Weakness. Knee and ankle reflex absent. Abdominal present on right side. Absent or slight on left. Vasomotor disturbance in leg. Left leg had been amputated for sarcoma. Atrophy of interossei muscles. Irregular anesthesia on trunk and limbs. Wassermann blood after mercury —. C S. F. ++. Noguchi +. Nonne +. Cell count 188. Only a few drops of fluid were obtained from the spinal canal at the first treatment and only with great difficulty was any obtained thereafter. Two injections were given the patient two weeks apart, but no improvement was noted in any way and he suffered great pain and prostration. The patient lingered on six months and died of recurrent sarcoma. The autopsy by Dr. Ophüls showed almost complete adhesions of dura to pia of cord on both sides, the adhesions are strongest and thickening of pia most marked on posterior surface. Irregular hyperemic spots in pia anteriorly. Cut surface of cord at various levels shows some softening, slight discoloration in periphery, no tract degenerations seen. Moderate arteriosclerosis of arteries at base of brain. Pia of brain normal. No gross lesions noted on several frontal incisions.

From this autopsy it is evident that the "almost complete adhesions" referred to would prevent any general dissemination of the salvarsanized serum and negative any attempt at this form of local treatment.

Case 8—Cerebral lues. Mrs. Z., age 33. Brought to hospital in depressed state. Refused to speak and understood no English. From her husband it was learned that she was paralyzed two years ago. Was three months in C. and C. Mastoid on left side three weeks before paralysis. Recovered fairly well and has remained in normal spirits and good health ever since until present trouble. Has been depressed for eighteen days. Would suddenly stand still with indifference and without interest. Not excited. Had blank attacks like petit mal while at her work. Would not talk. Sent to hospital for diagnosis.

Examination—Spastic in arms and legs. Pupils unequal. Tongue to left. Deaf in left ear. Impossible to test on account of stupor and lack of interpreter. Wassermann blood ++. Cerebro Wassermann +++. Nonne ++. Cell count, 22.

The first two treatments did her no special good mentally, but the spastic condition of arms and legs disappeared. The next three treatments were followed by rapid mental improvement.

The difficulties of the technic lie in securing the 40cc of blood an hour after the salvarsan, where the veins are small. Absolute asepsis is essential of course and to overcome the likelihood of trouble it seems a wise step to advise exposing a vein. All of the work ought to be done in an operating room with every facility for surgical cleanliness and the patients should be kept in bed for two or three days after the treatment. It is our experience that this minimizes the chance of pain, which is often very severe after the treatments. Having secured the blood in a sterile tube we found that if it were put on ice too soon the clot failed to separate and an immense amount of work of centrifugalizing was required next day. We used big test tubes to receive the blood and poured off the clear serum instead of pipetting it. Possibly in a large centrifugal machine such as Swift and Ellis refer to they get clear serum very easily. Occasionally the serum is dark, smoky color and unchanged on filtering, apparently some hemolysis having taken place. We have noted no bad effects from using this serum. Most of our patients had no reaction, but when they experienced pain it was generally very severe, requiring two or three injections of morphine. We paid no attention to intraspinal pressure, but removed where we could an amount of fluid equal to the amount we injected. Where tapping had been done the day before this was not always possible, but a variation of a few cc did not seem to cause any increased disturbance.

SUMMARY.

From our experience with eight rather helpless cases, for whom no relief promised from other forms of treatment, it seems reasonable to use salvarsanized serum intraspinously.

There is reason to hope for improvement as long as the cerebro-spinal fluid remains Wassermann positive or shows pleocytosis.

The earliest improvement is shown by a tendency of the sensory symptoms to return toward normal.

After three to five treatments there has been some improvement in the gait of tabetics, even without special Frankel training. The reaction to the intraspinous treatments is sometimes very severe. Patients should be kept in bed for three days.

Dr. Grace Linforth Boalt in discussion: In the Sonoma State Home for Feeble-Minded and Epileptics from July 15th, 1911, to January 11th, 1914, the sera of one thousand two hundred and six inmates have been examined by the Wassermann test. There are forty-five more to be examined. Five per cent. of this number were positive. The positive cases and one hundred negative cases were checked by the Noguchi modification with the same findings, except in three cases, which gave a stronger reaction. At present there are one thousand and fifty-one inmates in the home. Two hundred and eighty-one, or one-fourth of the inmates, are epileptics. One-fourth of the inmates with the positive Wassermann were epileptics. That is, the per cent. of syphilis among the feeble minded in this home is five per cent., whereas among the epileptics it is twenty-five per cent. Forty-nine cases have been treated with salvarsan and neo-salvarsan. All responded promptly and satisfactorily from a serological standpoint, excepting three cases. Two of these cases were more of the insane type than feeble minded. One, age 12, who was failing rapidly before the treatment, died six weeks from the administration of the first treatment from syphilitic meningitis. Second

case, age 17, died three months from the first treatment from syphilitic meningitis. The Wassermann findings in the serum and spinal fluid did not change from a triple positive during the intervals. These cases might have resulted differently with the Swift-Ellis treatment. The third case is an epileptic, and so far all intravenous and mercurial treatment has not changed the degree of the intensity of the test or the number of convulsions. She has had nine convulsions a year for five years. She is now being treated with iodipin, and if we find the spinal fluid positive, Dr. Dawson will get the consent of the parents to give the Swift-Ellis treatment. At Agnews one case of hereditary syphilis is receiving the treatment, also a number of general paresis cases. Of thirty-eight cases of paresis in one institution the serum and spinal fluid both give triple positive in twenty-three cases. Two, an + positive serum and +++ positive spinal fluid. Three ++ positive serum and +++ positive spinal fluid. Ten cases gave a negative serum test with a triple positive spinal fluid. A few of these cases were checked by the Noguchi modification with the same results. Captain C. G. Snow of the General Letterman Hospital, Presidio, has checked a number and Dr. W. T. Cummins of the Southern Pacific Hospital a few of these cases, with the Lang's colloidal gold chloride test with some interesting findings. The spinal fluid of two meningitis cases, the patients showing mental symptoms, and giving a history of a recent infection, gave an absolute negative Wassermann with all other findings positive. That is, a differential cell count, a Nonne and butyric acid test. Both received prompt treatment with salvarsan intravenously and mercury with prompt and satisfactory return to normal. These were not institutional cases.

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## PROSTATIC CARCINOMA IN A YOUTH.

By S. J. GARDNER, M. D., and W. T. CUMMINS, M. D., San Francisco.

L. P. R. Age 17 years. American. Machinist apprentice. Admitted Oct. 2, 1911. Family history negative. Previous history—no recorded illness except diphtheria 9 years ago.

Present illness: Onset about seven weeks ago with colicky pains in lower left side of abdomen accompanied by vomiting. Pains radiated to left testicle. No hematuria. Incontinence of urine affected by posture. Three weeks ago pain shifted to right side of lower abdomen and radiated to right testicle. Has lost much weight.

Examination: Well nourished, fairly well developed young man. Pulse and respiration normal. Eyes normal. No eruption. Tongue clean. Heart and lungs negative. Rectal examination bimanually shows hard, lobulated enlargement of the prostate, which was particularly painful on palpation.

Urinalysis: Clear; sp. gr. 1018; acid; no sugar nor albumin; no casts.

Death occurred on Jan. 12, 1912.

Post mostem record. Markedly emaciated. Lividity and rigidity moderate. No eruption, scars, nor bed sores. Peritoneum smooth, moist, glistening and no increase of fluid. Position of abdominal organs normal. A large, firm, pale, nodulated mass completely fills pelvis. Spleen somewhat increased in size but of normal shape. Capsule strips with some difficulty. Cut surface shows markings of fibrosis. Color brownish red. No evidences of tumor metastasis. Liver of normal size and shape, and shows typical "nut-meg" markings. No evidences of tumor metastasis. Gall bladder, stomach, intestines and pancreas normal. Both kidneys somewhat larger than normal. Capsule strips easily. Color brownish red. Considerable dilatation of calyces as well as pelvis. Both ureters dilated throughout their continuity to size of lead pencil. Both adrenals soft, yellow and cystic.

The bladder is moderately dilated and contains approximately 200 cc. of urine. Its wall is considerably thickened and varies between 0.5 and 1 cm. The mucous membrane is moderately congested, thickened and rugose but no evidence of ulceration. In the prostatic region there lies a firm, pale, nodular mass which has exerted considerable pressure upon the rectum, as dilatation is seen above the area of stenosis. This mass includes the neck of the bladder and as far back as the openings of the ureters. Two small masses project into the bladder. On sectioning, these masses are firm and pale with whorls and bands of tissue apparently of connective type. There are no evidences of congestion nor hemorrhage. The prostatic urethra is stenosed and the mucous membrane of this as well as the membranous portion is moderately congested.

Mesenteric nodes are enlarged, firm and pale, their average size being about that of a soup bean. The retroperitoneal group are enlarged to the size of chestnuts with the same general consistency and appearance as the mesenteric group. Near the splenic flexure of the colon there is a pedunculated lymph node somewhat larger than a horse-chestnut (6x5x4 cm.). Its tissues are identical in appearance with the other nodes. Though very pale this was at first mistaken for an accessory spleen.

Permission for a partial autopsy only was granted so that an examination of the thoracic organs and central nervous system could not be made.

Histological examination: Spleen. Capsule and trabeculae show moderate fibrosis. Sinuses in places considerably dilated. Large quantities of hemosiderin are seen. Liver. There is no obnormality except for a moderate passive congestion and hemosiderosis of parenchyma near the midlobular areas. Kidneys. Capsule is moderately fibrosed. Much of the cortical epithelium shows degenerative and necrotic changes. In some of the tubules the epithelium has desquamated. There are numerous areas of connective tissue overgrowth. Adrenals. Marked vacuolation of the cells of the fascicular and reticular zones. Pancreas. A moderate fibrosis is evident. Prostate. There is considerable over-growth of connective tissue. The epithelium of many alveoli shows marked proliferation and penetration of the basement membrane. In some places evidences of alveoli are seen but in many other places the epithelial masses are solidly formed. Retroperitoneal lymph nodes. All of these are of the same general structure. The connective tissue shows some overgrowth and between these trabeculae there are large and small masses of cells with vesicular nuclei resembling closely the above-mentioned alveolar epithelium of the prostate.

Clinical diagnosis: Sarcoma of the prostate.

Pathological diagnosis: Carcinoma of the prostate and retroperitoneal lymph nodes; chronic in-

terstitial splenitis and hemosiderosis; passive congestion of the liver; chronic parenchymatous nephritis; hydronephrosis and hydrometer; chronic interstitial pancreatitis.

## THE RELATION OF LOCALIZED TENDERNESS TO THE SITE OF THE CAUSAL LESION IN PERFORATIVE PERITONITIS.*

By R. T. STRATTON, M. D., Oakland.

In keeping with this symposium the bearings of this paper will center on perforation is gastroduodenal disease. Four cases of perforation of ulcer of these parts coming within the writer's personal experience form the clinical basis of this paper.

The time limit will permit neither the consideration of the relations of the symptom under special view to the larger symptomatology of perforation, nor to the differential diagnosis.

The weight of present-day judgment seems to be that within several hours from the time of perforation there is usually a widespread, diffuse abdominal tenderness, and in addition "careful search will reveal an area of exquisite intensity overlying the ulcer." [1] Other localized areas of special tenderness with a single exception, are not dwelt upon, as one of the generally recognized occasionally associated features of the condition.

A number of authorities dwell upon the fact that with perforation in certain cases of duodenal ulcer, the main symptoms may become localized in the cecal region, and have often led to operation for appendicitis, instead of a first, direct surgical attack upon the upper digestive tract. The real source of these symptoms has even been overlooked after this misapplied surgery. Moynihan, as early as 1901, found 49 recorded cases of perforated duodenal ulcer resembling appendicitis, in 18 cases of which the first abdominal incision had been made over the appendix. His explanation is that the foreign fluid following the right-sided para-colic peritoneal planes, reaches the *caput coli* and causes there the local serous irritation which results in so much symptomatic confusion and surgical error. Even within the first three hours following perforation, greater abdominal resistance and more marked, even exquisite, tenderness may exist at the usual site of the appendix.

It may be that this was the exceptional condition Munro had in mind, when speaking broadly of peritonitis but without detailed reference or attempted explanation, stated that "the tenderness and spasm, with few exceptions, are located over the area of more marked infection." [2] Ordinarily, however, in perforation of both gastric and duodenal ulcers, the extruded fluid runs at large in the peritoneal cavity, in an indefinite way, producing diffuse peritonitis.

In view of what clinical experience has established in regard to local symptoms developing in the right iliac region, does it seem unreasonable that similarly localized symptoms of irritation should arise in the presence of an advancing peritonitis in other portions of the abdomen as well? It has not, however, thus far come to the writer in his search, that except as already noted, other associated areas of special irritation are generally recognized. That, however, restricted irritative symptoms at a distance from the ulcer, amongst which localized tenderness must be one, are often enough met with but wrongly interpreted prior to the operation, is strongly suggested by the surgical errors reported in connection with operations in the course of peritonitis from gastroduodenal disease. Often enough, the operator's efforts for a short search and a quick operation are hampered by a misinterpretation of symptoms and a consequent disadvantageously placed abdominal incision. Yet in the long run, the amount of manipulation of the viscera, the operative trauma, the time consumed in operation affect decidedly the mortality rate.

The findings of the writer are at variance in some respects with what seems to be the generally accepted relationship of localized tenderness in this disease. The apparently controverting testimony noted in his cases, if admitted, may, therefore, be regarded as exceptional.

A possible source of difference between observers as to conclusions regarding sensitive areas might result from different degrees of palpatory pressure. The method of abdominal palpation followed by the writer was not a deep but a moderate, reasonable pressure such as the condition of the patient would warrant, and the superficial location and the sensitiveness of the parts require. If, however, the results of deep and moderate pressure are at variance, it would be well to have the difference established.

As the result of his personal observations the writer is disposed toward the following conclusions bearing upon the relation of localized tenderness to the site of the causal lesion.

1. The site of the perforated ulcer, as indicated by moderate abdominal palpation within several hours after the onset, is not uniformly *intensely* sensitive.

2. Neither is it always the most sensitive area.

3. In addition to the well recognized local symptoms referable to the region of the perforated ulcer and the appendix, other parts of the abdominal viscera may, exceptionally, be the seat of confusing sensitiveness.

Case 1. D., male, age 50, first seen over twenty-four hours after perforation, refused operation and perished. Autopsy showed diffuse septic peritonitis and perforated duodenal ulcer.

Case 2. P., male, age 35, first seen two hours after perforation, presented only classical symptoms of most intense degree; no diagnostic or operative difficulties. Operation showed perforation of gastric ulcer on the anterior surface to the right of the median lines, close to the greater curvature. Prompt recovery ensued.

Case 3. M., male, age 42 years, was first seen six hours after perforation. The entire abdomen was rigid and retracted. The pyloric region was not specially tender. There was, however, a per-

1. Deaver, John B.: Acute Perforated Duodenal and Gastric Ulcers. Annals of Surgery, May, 1913, p. 705.

2. Keen's Surgery, Vol. III, p. 771 (J. C. Munro).

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

sistent area of marked epigastric sensitiveness the size of an egg to the left of the median line, to the outer side of the left rectus. Its relation to the area of greatest muscular rigidity was not noted. Operation advised. It was three hours later before he could decide on his course, be gotten to the hospital and prepared for operation. Grumous material and inflammatory exudate covered the gastric and colonic surfaces beneath the area of special tenderness, but it was not specially restricted to that locality. Recent adhesions were present between stomach and abdominal wall. All parts exposed showed an intensely inflamed peritoneum; that portion beneath the seat of marked sensitiveness not as pronounced as that more adjacent to the location of the ulcer. **The perforation was found, not at the left beneath the most tender area, but on the opposite side** close to the pylorus near the lesser curvature. Recovery ensued.

Case 4. C., male, age 51 years, was first seen nine hours after perforation. He had been originally taken to a hospital in a neighboring city, where diagnosis was not made, but a hypodermic of morphine administered. Neither water nor whisky swallowed after onset caused gastric distress. His previous history as to ulcer was not convincing. He was without fever and in good general condition. He did not seem seriously ill, nor was he apparently must distressed. His abdomen was only moderately contracted. **The left side was decidedly the more rigid.** There was only a mild, **diffuse,** epigastric tenderness. There was, however, an area of marked sensitiveness, sharply localized beneath the **left rectus about 5 cm. below the level of the umbilicus,** beneath the most rigid portion of the abdominal parietes. Colonic irrigation was without result. The water returned with an apparent slight bloody tinge with sanguino-mucous flakes. Diagnosis was in doubt. The aggregate of symptoms and physical findings seemed to indicate a lower intestinal, rather than a gastric or duodenal lesion. Operation three hours later. Incision was made in the midline below the umbilicus. Everywhere was present the evidence of pronounced, diffuse, septic peritonitis. Beneath the area of special tenderness, there was a small, rather localized collection of sero-purulent and flaky exudate. The cecal and left transverse colonic regions, where special symptoms of irritation were not noticeable before operation, showed, however, the same condition. This incision was closed except at its lowermost portion where a pelvic drain was placed. The epigastrium was then opened and **perforation was found distant from and on the side opposite to the site of greatest sensitiveness,** close to the pylorous, at the lesser curvature. Recovery ensued.

Can these findings be reconciled with the generally recognized symptomatology and with the numerous apparently contradictory operative observations? The following is offered as a possible solution:

The portion of peritoneum at the site of perforation, in certain instances, being subjected to continuous, prolonged irritation from an unusually concentrated and irritating extruded gastric contents, to which the tissues of some individuals may react differently than those of others, may after a time, lose something of its sensitiveness and fail to respond to increased stimulation by palpation. This condition would only be analagous to the well recognized depression of nerve function, even paralysis, resulting from overstimulation in other parts of the body of motor, and special sense nerves. Or as a result of local toxic and inflammatory influences, actual changes may take place in the delicate peritoneal nerve terminals that prevent the conduction of pain impulses.[3] Coincidentally, other areas coming within the zone of spreading irritation, either for some reason naturally more sensitive or having been subjected to a less overpowering degree of irritation, by reason of their distance from the ulcer, may at this later period and at least temporarily, be relatively more keenly alive to pressure than is the original focus from which the irritation has come. That the greatest abdominal wall protective rigidity should then be over these now more sensitive parts does not seem to be strange or unreasonable; or that, as these new peritoneal areas are involved, symptoms referable to the newly affected part may stand out, at least for a time, with conspicuous boldness and attract and unduly hold the surgeon's attention.

At times the approximate site of perforation is susceptible of fairly close determination. But again, with an incomplete antecedent and recent history, a knowledge of which the sufferings of the patient or the ignorance or nervousness of his associates prevent the surgeon from gaining; with an atypical symptomatology; with other symptoms resulting from almost necessary complications of the primary disease pressing to the front and obscuring the original state; with the usual signs of morbidity dissipated or altered by injudicious narcotic medication, the clinical picture may be so changed, that the diagnostic skill of the well informed surgeon may be overtaxed.

This much, at least, is demanded in the presence of general peritonitis: If the local tenderness and other signs seem to indicate that the appendix is involved, before its surgical approach, the duodenum should be questioned and first given clearance. If localized tenderness exists in other abdominal areas, no matter how low down, the stomach and duodenum, both, should be considered as possible original sources of trouble, and passed upon. After the lapse of several hours from the time of perforation, local abdominal tenderness must be cautiously judged and discriminatingly received, if at all, as a directing symptom. The possible falsifying peritoneal tendency as to localized tenderness demands its accurate collation with all other symptoms of the condition in question together with a consideration of the stage of the disease and the available history.

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## THE BUTYRIC ACID TEST OF NOGUCHI AS AN AID IN DIAGNOSIS.*

By F. F. GUNDRUM, M. D., Sacramento.

The cerebro-spinal fluid is the liquid which bathes the brain and spinal cord, acting, first, as a hydraulic cushion to protect against jars; second, as a medium to carry away waste products; and third,

3. Prof. Maxwell, of the Department of Physiology, University of California, informs the writer that the possibility of paralysis from overstimulation is positively determined in sensory nerves. As to the conduction of pain impulses, the matter has not, so far as he is aware, been actually worked out; he regards it, however, not improbable. He advanced the suggestion of the possible depression of the function of pain conduction from toxic effects on the nerve terminals, as a probable added factor in this special condition.

* Read before the California Northern District Medical Society, at Sacramento, California, November 11, 1913.

as a reservoir to regulate intracranial pressure. The whole amount of the spinal fluid, at any one time, is uncertain, possibly in an adult from 50 to 90 CC. The fluid is actively secreted from the choroid plexuses in the lateral ventricles. The tangled web of blood vessels in these organs is covered by a single layer of flattened cells which have their origin in the posterior wall of the embryonic neural canal, and are, therefore, epiblastic in origin. The spinal fluid is secreted by them into the cavities of the lateral ventricles. It flows from the two lateral ventricles through the foramina of Monroe, into the third ventricle, thence through the aqueduct of Sylvius into the fourth ventricle. From here the larger portion passes through minute openings in the roof of the fourth ventricle, the foramina of Magendie, and spreads out over the cortex of the cerebrum and downwards in the subdural spaces of the cord, where it is taken up by the lymphatics and veins of the dura and returned to the general circulation. A smaller portion penetrates the central canal of the cord. The fluid under normal conditions is a water-clear, alkaline liquid under a pressure of approximately 100 mm. of water. It does not coagulate when left to stand; the specific gravity varies between 1002 and 1010.

It is considered abnormal to find more than about eight white blood cells to each c. mm. of fluid; usually there are but one or two; these belong to the group of lymphocytes. Chemically, the fluid shows but a faint trace (.03 to .06%) of proteid and a small amount (0.1%) of dextrose, enough to give a slight reduction of Fehling's solution.

Under the influence of diseases of the central nervous system, the spinal fluid undergoes certain alterations in physical, cellular and chemical characteristics.

1. The physical properties may become changed in the following ways: a. Cloudy fluids. These cloudy fluids generally indicate an extravasation of white blood cells into the cerebro-spinal fluid—in other words, a meningitis. Microscopical examination usually easily determines what type of invading organism is the cause of the turbidity observed. b. Bloody fluids. These are seen particularly after fractures of the bony canal protecting the spine or skull, and are often an early evidence of fracture at the base.

2. Changes may take place in the cellular contents. a. Polymorphonuclear cells may be greatly increased as is commonly seen in the cerebro-spinal meningitis, influenzal meningitis, etc. b. Lymphocytes may show marked increase in numbers as in tuberculous meningitis and lues. c. Increase in red cells often follows injury done by the needle upon entry. This blood is small in amount and a few seconds of flow clears the needle. The presence of blood from such a slight injury differs very greatly from the abundant crimson flow often seen after cranial fracture.

3. Marked changes may also take place in the chemical reaction of the fluid. The capacity for reducing Fehling's solution may be lost. The proteid content may or may not be increased. It is upon this latter chemical characteristic (the presence or absence of a demonstrable increase in proteid content) that this series of 43 cases was recorded. There are several common tests for the determination of the excess of albumen.

1. Nonne's. The fluid is mixed with an equal quantity of warm saturated ammonium sulphate solution. The appearance of turbidity or precipitate declares a positive test.

2. The hydrochloric acid test of Braun & Husler. Only 1 cc. of cerebro-spinal fluid is required for this test. To this is added 1 cc. at a time, a solution of .003 normal hydrochloric acid. If after 5 cc. are added, no precipitate forms, the reaction is negative. It is desirable that a freshly prepared solution of the acid be used.

3. The butyric acid test devised by Noguchi. Two parts of cerebro-spinal fluid are mixed with five parts of 10% butyric acid in normal salt solution and the mixture is brought to a brief boiling. Then one part of normal sodium hydroxide solution is added and the fluid brought to a second brief boiling. The appearance within fifteen minutes of a flocculent or granular whitish precipitate constitutes a positive test. A faint turbidity without flocculi is to be considered negative.

During the past three years at the Sacramento County Hospital we have obtained for study the cerebro-spinal fluid of 43 cases in which pathological, microscopical or other laborator examinations made the clinical diagnosis undoubted. Thus we had data at hand for the estimation of the ultimate value of the butyric acid test in clinical diagnosis. These cases easily fell into two groups.

1. Those in which cloudy fluids were obtained. Of these, ten were spinal meningitis and two secondary meningitis due to pneumococcus. These, of course, were all positive as would be expected. The fluids were centrifuged and the clear portions only used for the tests. In 31 instances clear fluids were obtained. The list of diseases included here is a varied one. It embraces a heterogeneous group of maladies in which some symptoms referable to damage in the cerebro-spinal axis developed. Positive reactions were obtained in tabes, general paresis, tuberculous meningitis, poliomyelitis and rabies. Negative reactions were obtained in endocarditis, old poliomyelitis, old hemiplegia, bronchopneumonia, cerebellar tumor, typhoid, sunstroke, uremia, delirium tremens, influenza and lobar pneumonia. The group of negatives seems to include very many remotely allied maladies, but in all of them, at the time the lumbar puncture was made, there was some symptom or sign suggesting a possible involvement of the brain, cord or meninges. The accompanying chart represents more graphically the diagnosis made clinically and those made later pathologically, with the result of the butyric acid test in the right-hand column.

## BUTYRIC ACID TEST.

### (A.)—Cloudy Fluids.

Fluids centrifuged and clear portions used for test.

| | Diagnosis. Clinical. | Pathological. | Butyric Acid test. |
|---|---|---|---|
| 1 | Cerebro-spinal meningitis | Diplococcus | Posit. |
| 2 | " " " | Diplococcus of Weischelbaum | Posit. |
| 3 | " " " | " " | Posit. |
| 4 | " " " | | |
| 5 | " " " | " " | Posit. |
| 6 | " " " | " " | Posit. |
| 7 | " " " | " " | Posit. |
| 8 | " " " | " " | Posit. |
| 9 | " " " | " " | Posit. |
| 10 | " " " | " " | Posit. |
| 11 | Secondary meningitis | Pneumococcus | Posit. |
| 12 | " " | " | Posit. |

### (B.)—Clear Fluids.

| | | | |
|---|---|---|---|
| 1 | Cerebral lues | Wassermann (Noguchi) | Posit. |
| 2 | Tuberculous meningitis | Autopsy tubercles | Posit. |
| 3 | Acute rheumatism Endocarditis meningismus | | Negat. |
| 4 | Poliomyelitis (old) | | Negat. |
| 5 | Lues spinal | Wassermann (Noguchi) | Posit. |
| 6 | Lues spinal | Gummata in skin | Posit. |
| 7 | Hemiplegia (old) | | Negat. |
| 8 | Pulmonary tuberculosis | Cavities in lungs | Negat. |
| 9 | Tuberculous meningitis | Broncho-pneumonia | Negat. |
| 10. | Uremia (?) | Tuberculous meninges | Posit. |
| 11 | Multiple sclerosis | | Negat. |
| 12 | Cerebro-spinal lues | Wassermann (Noguchi) | Posit. |
| 13 | Tabes dorsalis (classical) | | Posit. |
| 14 | Cerebellar tumor | Glioma (autopsy) | Negat. |
| 15 | Lues | Wassermann (Noguchi) | Posit. |
| 16 | Poliomyelitis (acute) | Flaccid paralysis | Posit. |
| 17 | Tuberculous meningitis | Tubercles on pia | Posit. |
| 18 | Tuberculous meningitis | Tubercles on meninges | Posit. |
| 19 | Meningitis (typhoid) | Typhoid fever (meningismus) | Negat. |
| 20 | Tuberculous meningitis | Tubercular bacilli (guinea pig) | Posit. |
| 21 | Cerebro-spinal lues | Wassermann (Noguchi) | Posit. |
| 22 | Cerebellar tumor | Glioma (autopsy) | Negat. |
| 23 | Tuberculous meningitis | Tubercles in meninges | Posit. |
| 24 | Tabes dorsalis | clinically typical | Posit. |
| 25 | Sunstroke | | Negat. |
| 26 | Uremia | Chronic nephritis | Negat. |
| 27 | General paresis | Clinically typical | Posit. |
| 28 | Rabies | Inoculation tests positive | Posit. |
| 29 | Cerebro-spinal lues | Wassermann (Noguchi) | Posit. |
| 30 | Delirium tremens | | Negat. |
| 31 | Influenza | B. Influenza in sputum | Negat. |
| 32 | Pneumonia lobar (meningismus) | Autopsy | Negat. |

The butyric acid test was not controlled by any of the other tests for albumen increase in this series, but merely by the autopsy and pathological findings in each case. Cases were reported in which ultimate diagnosis beyond reasonable doubt, was made through autopsy, miscroscopical or other laboratory method.

### CONCLUSIONS.

1. In this small series of 43 cases, the butyric acid test was positive in all instances where marked inflammation or degeneration was going on in the cerebro-spinal system.

2. It was absent in diseases where, although there seemed to be spinal involvement, no actual organic nervous lesion was present.

3. In all doubtful cases simulating inflammatory diseases of the brain or spinal cord, spinal puncture is indicated. If the fluid is turbid, the butyric acid test is superfluous. If the fluid is clear, the butyric acid test enables us to tell whether or not inflammatory or degenerative changes are taking place.

4. In other diseases where symptoms of meningeal irritation arise, the obtaining of a clear spinal fluid which fails to show the butyric acid test of Noguchi, is of considerable moment, particularly in the matter of prognosis.

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## SIX-HOUR STASIS.*

By HOWARD E. RUGGLES, M. D., San Francisco.

A six-hour residue in the stomach is the best evidence we have of pathology somewhere. It is a perfectly definite think—easily recognized. The normal limits of peristalsis or tone vary widely and it is often impossible to say definitely whether they are pathologic or not, but a residue is evident—whenever it is large enough to be recognized it means trouble. It represents the resultant of forces acting on the stomach contents; it is the balance between peristalsis and the resistance offered by the outlet. Normally tone and peristalsis will have overcome the sphincter and removed two or three ounces of bismuth from the stomach in three to five hours, so a residue means diminished emptying power or increased resistance at the outlet—usually the latter. Of course it is essential that no food be allowed to enter the stomach during the six-hour interval or the bismuth remnants will be mixed with the meal and an apparent residue result.

The commonest cause of a residue is pylorospasm, due most often to the irritation of a peptic ulcer near or upon it, but many other things cause pylorospasm reflexly. As Wm. J. Mayo said recently: "The stomach is the alarm box of the abdomen—the fire is often elsewhere in the peritoneal cavity and the water is too often turned on the alarm box instead of the conflagration." Kaufman, in his presidential address before the Gastroenterological Congress in Washington last year, made the statement that there is no organ in the body, functional or organic disease of which will not eventually affect the stomach.

Cannon in 1905 showed that in cats, after intestinal section and anastomosis, peristalsis went on in the stomach as usual after the introduction of food but the pylorus remained tightly closed for six hours. He also showed that a drop of croton oil in the rectum or cecum caused prolonged gastric and ileal stasis. Some recent work by Baumstach (Zeitschr. f. phys. Chem., 1913, p. 437) has shown that partly fermented mixtures introduced into the small intestine in fistulous animals produced gastric stasis where normal contents did not.

The Roentgenologists have seen a good many of these reflex spasms of the pylorus. George, Case, Barclay and others have seen them in ulcer, gallbladder, and appendiceal disease, gastric tumors, renal calculi, pelvic affections, tabes, hysteria, hyperthyroidism, morphine and nicotine poisoning and oral sepsis.

At St. Luke's we have had 35 cases of six-hour residue since last fall—11 of them were confirmed by operation or post-mortem, and in 14 others the diagnosis, both clinical and radiological, was reasonably certain.

Of the proven cases there were:

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|---|---|
| Duodenal ulcer | 3 |
| Chronic appendix | 3 |
| Cancer of fundus | 2 |
| Cancer of pylorus | 1 |
| Cancer of oesophagus | 1 |
| Sarcoma of liver (metastatic) | 1 |

Including the cases before mentioned the series showed:

| | % |
|---|---|
| Duodenal ulcer | 30 |
| Cancer of stomach | 25 |
| Chronic appendix | 17 |
| Ptosis | 11 |

and one case each of gall bladder disease, cancer of the esophagus, sarcoma of liver, benign stenosis of pylorus, partial obstruction of small intestine and morphine poisoning. I have also seen residues with tuberculosis of ileum, lues of stomach and pericolic membranes.

* Read before the San Francisco County Medical Society, April 7, 1914.

## TABULATION AND DIFFERENTIAL DIAGNOSIS OF LIVER CASES OCCURRING IN THE STANFORD WARDS OF THE CITY AND COUNTY HOSPITAL DURING THE PAST FEW MONTHS.*

By R. W. HARBAUGH, A. B., M. D., San Francisco.

The differential diagnosis considered in these cases will lie mainly between cirrhosis, lues and malignancy. They may be divided into the following classes:

Primary malignancy, 1 case; secondary malignancy, 3 cases; cirrhosis of liver, 2 cases; lues of liver, 2 cases; cirrhosis with malignancy, 1 case; tropical abscess of liver, 3 cases; passive congestion of liver, many cases.

Case 1. Irish laborer. Age 55. Complaint, "yellow skin, pain across the back." Patient was well up to three months ago. No previous history of stomach trouble or pain. Present illness began with vomiting immediately after eating, and pains in small of back. Became yellow gradually and had stabbing pains in right hypochondriac region. Jaundice cleared up for two weeks, but came back and increased to an intense yellow. Loss of weight was sixty pounds over a period of two months.

Physical Examination: Patient is deeply jaundiced. Liver extends from fourth interspace to four inches below costal border. It is not tender, but hard, firm and nodular. The spleen is palpable. No free fluid. There is a gland the size of a hazel nut, palpable in the right supra clavicular fossa. (Virchow's gland.)

Clinical Tests: 1. Wassermann—negative. 2. Blood—secondary anemia. 3. Urine—contains bilirubin and urobilin. 4. Stools—no occult blood. Bile is present. 5. Stomach—no stasis. No Hcl. Occult blood is present. This patient remained under observation before death. He ran a low-grade temperature. Had no vomiting. Some nocturnal pains, diminishing jaundice, gradual emaciation and ascites two weeks before his death.

Clinical Diagnosis: Primary carcinoma of gall ducts. Based on: Enlarged nodular liver, deep jaundice, Virchow's gland, anemia, cachexia, loss of weight, absence of ascites until late, absence of primary focus.

Differential Diagnosis: 1. Cirrhosis. 2. Secondary malignancy. 3. Lues. (a) Lues is ruled out on a negative Wassermann. (b) Against cirrhosis is the nodular liver. The presence of nodules rules out cirrhosis if they can be distinctly demonstrated as in this case. The late appearance of ascites (two weeks before death) is against cirrhosis. (c) Secondary malignancy is ruled out in the absence of a demonstrable primary focus in this case.

Autopsy Diagnosis: Primary carcinoma of the bile ducts and common duct.

A most interesting point in this case was that

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for two weeks before death the patient ran a leukocyte count of 30,000 to 40,000 with a high polymorphonuclear differential count. Before death this was explained as being most likely due to an infective cholecystitis. At autopsy smears and cultures from liver, gall-bladder, ducts, gastro-intestinal tract, etc., were taken with negative results.

We have had two other cases of a similar nature. One was a primary carcinoma of the pancreas, the other a cirrhosis of the liver.

Case 2. In class "cirrhosis with malignancy." Street sweeper; age 64. Complaint, "stomach trouble and pain in back." Patient has been a heavy drinker for years. Was well up to five months ago, when he had some slight indigestion and pain across the abdomen. Has been very constipated. Has lost sixty pounds in the last six months. About three weeks ago his abdomen began to swell. He has no pain now and enters hospital because of weakness.

Physical Examination: Patient's abdomen is distended and typical signs of fluid are present. About three gallons of clear, straw-colored fluid are withdrawn and the liver is felt two-finger breadths below costal margin. It is exceedingly hard, almost bone-like and not at all tender. The edge is irregular in contour but no nodules are felt. Spleen not palpable.

Clinical Tests: 1. Wassermann—negative. 2. Blood—normal. 3. Urine, foeces, sputum—nothing abnormal. 4. Gastric contents—normal acidity. This patient was under observation for three weeks. He had no gastric disturbance or pain in abdomen. Ran a low-grade temperature. Had rapidly recurring ascites after tapping.

Clinical Diagnosis: Cirrhosis of liver. Based on: Alcoholic history with indigestion, gradual weakness with loss of weight, ascites, and the character of the liver—which was exceedingly hard, smooth and not tender.

Differential Diagnosis: 1. Cirrhosis. 2. Secondary malignancy. 3. Lues. (a) Lues is ruled out on the grounds of a negative Wassermann. (b) Secondary malignancy—against this we have the fact that the liver was smooth. In the absence of demonstrable nodules in the liver along with the absence of the demonstrable primary focus, a diagnosis of secondary malignancy could not have been made. (c) So our diagnosis is cirrhosis made on the basis above given.

Autopsy Diagnosis: A typical cirrhotic liver. In addition there were three nodules ranging from the size of a walnut to a hen's egg. These were located on the anterior surface high up under the diaphragm, and on section proved to be carcinomatous. So our case is a cirrhosis of the liver undergoing an early primary carcinomatous degeneration.

Case 3. In class of "secondary malignancy." Teamster; age 48. Complaint. "pain in stomach region." Patient's trouble began eight months ago with loss of appetite and feeling of weakness. Belches gas but has had no pain after food. Is a heavy drinker and denies chancre. At times has had a dull pain in the right hypochondriac region which radiates to axilla. Loss of weight fifty pounds in four months.

Physical Examination: Examination of abdomen shows a dome-like extension in epigastrium from costal margin to umbilicus. It appears to be most prominent to right mid-line. Right flank fuller than left. Palpation proves the mass to be liver. The lower edge is palpable straight across the abdomen just above umbilicus. Right lobe appears to be as much enlarged as left. The edge is very hard and irregular. Not tender. On the surface many hard, small nodules are palpable, being about the size of a hickory nut. Irregular ridges are palpable on the liver surface. It is very hard and bone-like. Spleen not palpable.

Clinical Tests: 1. Wassermann—negative. 2. Blood—no anemia. 3. Urine—negative. 4. Stool—large amount of fat. 5. Gastric contents—normal acidity. 6. Sputum—negative. This patient was under observation one month before death. Had no pain or stomach upset. Ran a low-grade temperature.

Clinical Diagnosis: "Secondary carcinoma of the liver." Based on: The large nodular character of the liver. Cirrhosis is ruled out by the nodular character of the liver. The primary focus could not be definitely established in this case, but the quantities of fat in the stool classed the pancreas as a probable point.

Autopsy Diagnosis: A primary cancer in the body of the pancreas with secondary nodules in the liver. The primary focus being in the body of the pancreas accounts for the lack of pain during the course of the disease.

We have had one other case similar to this with the primary focus involving the tail of the pancreas. The head of the pancreas is the common focus in pancreatic disease and the course is apt to be without pain, as in our cases, unless the head is involved.

Case 4. In "luetic" class. Male; age 38. Locomotive fireman. Complaint. "pain in the right side of chest and abdomen and shooting pains in legs." Patient has been ill for past year. Has had no gastro-intestinal upset. He is unable to work because of headaches and severe pains in the legs and other bones. Has had fever and chills at times. Has never had a chancre. Has lost no weight. For the past six weeks he has had shooting pains in the right hypochondriac region.

Physical Examination: Shows the liver to extend a hand's breadth below the costal margin and the left lobe is larger than the right. The edge is hard, irregular and exceedingly tender. No nodules are felt, but the surface is irregular. No fluid. Spleen not palpable.

Clinical Tests: 1. Wassermann—+++ positive. 2. Blood—normal. 3. Gastric contents—normal acidity. 4. Urine, foeces, sputum—normal. This patient remained in hospital three months. Lost no weight. Had severe pain in liver region, developed a periostitis of rib. Ran a slight temperature at times. Had a slight jaundice at times.

Clinical Diagnosis: "Lues of liver." Based on: History of headaches, shooting pains in leg and liver, periostitis of rib, character of liver—irregular, very painful, left lobe larger than right, slight jaundice, slight temperature, and duration of one year with no loss of weight. Positive Wassermann. Salvarsan in repeated doses and mixed treatment was given, and in two months the liver had reduced definitely in size. The pains had gone and patient was able to leave hospital and continue work.

Abscess cases. We have had three cases of liver abscess in the past few months, with the amebae demonstrated in each case in scrapings from the abscess wall. Two of these patients had been in the tropics and gave histories of previous dysentery of from six months to one year's duration.

The third was that of a French woman who has lived in San Francisco for the past twenty-five years and has had no dysentery. A large abscess with typical "anchovy sauce" pus was found at operation involving the right lobe of the liver. Curettings in the abscess wall contained amebae.

The case is of interest from the standpoint of her twenty-five years residence in San Francisco.

Passive congestion cases. We see many cases

with livers enlarged nearly to the pubes from passive congestion in heart cases, and cite this congestion and enlargement as an etiological factor in a subsequent cirrhosis.

I wish to express thanks to Dr. H. P. Hill, and Dr. R. B. Tupper for their aid in the direction of the study of these cases.

## UNCOMFORTABLE BABIES.

By LANGLEY PORTER, M. D., San Francisco.

The uncomfortable baby presents one of the most trying problems that the clinician has to face, for when the infant is in distress, the whole family becomes neuresthenic and the trials of the attending physician are numberless.

It is unfortunate that too often our views of the cause of discomfort in these little ones, are limited to the digestive tract; and even in this field, to disturbances of gastric and intestinal digestion, while as a matter of fact the underlying root of the disturbance may be in an entirely different area.

It might be well to divide these babies who show discomfort into groups. First, there is the great group of the breast-fed, as opposed to the second group of artificially nourished babies. In order to consider the breast-fed more in detail, it would be well to subdivide chronologically into the periods of early infancy and middle infancy,—that is, respectively, from the first day to the end of the fourth month, and from the end of the fourth month to the end of the tenth month. Bottle-fed babies can be grouped in the same way, but a third group should be added which we will call the group of later infancy,—that is, from the tenth to the sixteenth month.

The causes of discomfort in the first group of the breast-fed are, for the most part, due to errors or neglect on the part of the attendants. At this time, with these babies digestive disturbances are less frequently the cause of discomfort than are one or another of the causes which have nothing to do with stomach or intestines. These causes that should be sought for may be in the environment of the baby, for instance, it is a very frequent experience to be called to see a child in its first week who is the subject of a fit of uncontrollable crying, and after having assured ourselves that the cause is not a serious one, to order the child out of its baby clothes, have it wrapped in cotton-wool, to see it immediately cease crying and go to sleep. The ordinary clothes designed for the covering of an infant certainly reflect no credit on human intelligence. The tight, inelastic belly-band, with its innumerable windings, alone is the cause of much suffering, and I have seen more than once, the axillae of infants excoriated by the hard seams of ill-fitting petticoat and dress sleeves. Aside from the fit of the clothing, its excess may cause a good deal of discomfort to the baby, for while an infant needs to be maintained in a state of warmth, an excess of heat is most distressing to it.

A not infrequent cause of discomfort lies in the use of a feather or other soft pillow for a mattress. The little one placed on such a support, or rather lack of support, is twisted into all sorts of strained positions, and many a whining, weary child is changed into a happy, normal baby by the simple expedient of replacing such a pillow by a little hair mattress. The pillow for the infant's head, is, also, a source of much discomfort. It is usually much too large, and, in many instances, so soft that it is divided by the baby's head with the result that the child's face and ears are buried in soft down, whereupon head-sweating with its attendant irritation develops. The best pillow for a little baby is made thin and is composed of hard packed hair, or better still, one or two thicknesses of sadler's felt.

It is needless to call attention to excoriation of the buttocks as a cause for distress. I am sorry to say that a great many more babies come from obstetrical hospitals with excoriated buttocks than should. More and more, I am convinced that the physician who does not pay attention to minute details when dealing with infants does himself and his patient much wrong. I have come, of late years, to insist on seeing the diapers of babies changed whenever I am in attendance, and it is really astonishing how neglectful many mothers and nurses are of ordinary cleanliness. Another cause of crying, commonly overlooked, is phimosis, the existence of which is a reflection on our profession, for if every male baby as should happen, underwent a retraction of its foreskin during the first three days of life, there would be no such thing, and a great many babies that now cry would be still. Phimosis, however, is not the only cause of pain that arises from the urinary tract of children. It is a very common occurrence to have young babies pass small concretions of uric acid, and in such instances the careful examination of the diaper will reveal bright, blood-red spots, the result of uric-acid stain. Even without such concretions, concentration of the urine or high acidity will often irritate and worry a baby sufficiently to make its crying almost intolerable to the family. Under such circumstances, the use of rectal injections of sodium carbonate, or normal salt solution, an ounce or two four or five times a day, coupled with free exhibition of water by the mouth will alleviate the trouble.

A rare cause of crying, amenable to the same kind of treatment, especially if it be combined with hypodermoclyses, is so-called pseudo tetanus of the new born. This used to be considered true tetanus neonatorum and was thought fatal, but we know now that it is merely the result of drying out of the tissues in very early life with a resulting increase of muscular tonicity and electrical response such that the picture closely mimics true tetanus. These children are exceedingly uncomfortable and cry almost continuously, and any attempt to handle them only adds to their misery; yet it is astonishing with what rapidity and completeness they respond to a saturation of their tissues with fluid. In many of these cases it would seem that sepsis lay at the bottom of the trouble, for often we find infections of the umbilical stump and even in the absence of this picture of pseudo-tetanus, such infection is by no means an uncommon cause of pain in the new-

born and should always be sought for before deciding that a baby is crying because of the belly-ache. It is sometimes believed that there must be a great deal of pus and much reddening of the surrounding tissues for an umbilical infection to be of any importance, but as a matter of fact, the infection which is evidenced by a moderate reddening, little pus, and a scant watery discharge is the one that seems most distressing.

Another cause for crying in early life which is frequently overlooked is the presence of a hernia, and the usual method of trying to restrain an umbilical hernia is hardly a less potent cause of discomfort than the hernia itself. The time is rapidly approaching when no one will use a button and pad with pressure for this purpose, any more than they will use the hard unyielding, quickly outgrown truss-makers' truss in order to retain inguinal herniae in infants.

The ear is such a frequent cause of pain in babies that it seems hardly necessary to call attention to it. The babies who have earache, however, can hardly be called uncomfortable babies for their distress is so potent and their cries so piercing that the presence of the ear trouble is rarely overlooked. Nevertheless, the usual underlying cause for earache in babies, the adenoid, is little thought of; and yet, not only is it the progenitor of ear abscess, but it, in itself, is the cause of much sleeplessness, irritability, and of many uncomfortable hours. Its presence often so interferes with the infant's meal at the breast that the baby goes on a strike and refuses to take food at all, or its meals are so disturbed that it develops indigestion and the train of discomforts and ills that follow in the wake of indigestion.

However, before discussing indigestion in the young baby as a cause of discomfort, I would like to call your attention to what I consider the commonest cause of crying and distress during the first three-fourths of the first year,—that is a fissure in ano. During the last five years, quite a third of all the children that I have been asked to see in consultation supposed to be suffering from colic or indigestion have had this condition, either independently, or accompanying some digestive disturbance. It is not necessary for the fissure to be very recent, or for the rectum to be much inflamed. The presence of the fissure very often gives rise to a marked hypertrophy of the sphincter, a condition often accompanied by spasm. Such babies give all the clinical signs of colic, drawing up of their legs, hard distended abdomen, and the saturnine smile, and all the other evidences of chronic distress. An experience as resident physician in a hospital for rectal diseases has led me to believe that the pains accompanying fissure and spasm of the sphincter and other acute and subacute rectal irritations are not exceeded by any other pains wthin the range of human experience.

Very recently, while watching Dr. Yerington's investigation of lues in children undertaken in our clinic, I have been impressed with the possibilities of inherited lues as a cause for distress and crying in babies, not only in those babies who show florid signs but in that other class which has little or no skin manifestations and which produces, in later childhood, the cases of tardy syphilis. Such a case was that of an infant who was brought because of discomfort, crying, and lack of gain. The child was reputed to have weighed nine pounds at birth, I saw it at four months, when it weighed less than ten. It had a very fine pale skin, with an abundance of hair, not the least sign of rash or other lesion. The complaint was that the child refused to gain, and was constantly uncomfortable at night, while fairly quiet during the day. There was no vomiting, a daily stool which was well-digested, smooth and yellow. The most careful consideration of energy needs which were abundantly supplied, produced no resulting gain in weight. Without much expectation of result, for the father, a thoroughly reliable man, had denied syphilitic infection, a Wassermann test was made. The report was triple x positive. Kept on the same food as before, the child gained 2 ounces a day after the injection of 1/30 gm. of salvarsan into the vein, and this improvement in weight was accompanied by a complete cessation of discomfort and a steady progression of the child towards health and comfort.

Of course, in spite of the numerous causes for discomfort which may be overlooked in the belief that all discomfort arises from errors in digestion, it still remains true that the greater part does arise from this cause; and in the case of the breast-fed infant, it is sometimes difficult to be sure whether or not overfeeding or underfeeding is the trouble. However, in my experience, it is rarely the latter. It is unfortunate that the older teaching as to the number of meals a child should have from the breast, while abandoned everywhere else in the civilized world, is still predominant here. Instead of wondering that so many children are uncomfortable when receiving ten breast-feedings a day, we should wonder that any do well, for there is no doubt that much discomfort arises from this frequency of feedings. It is a well demonstrated fact that the constant irritation of the breast so alters the breast milk that it becomes uncertain in composition, often higher than it should be in fat, and sometimes lower. Furthermore, the constant disturbance of the mother wearies her, and if one fact is well demonstrated, it is that the tired or over-wrought woman cannot secrete healthy breast milk. Variot, in his classical work on the nursling, states that whenever a wet-nurse in his hospital for sick children had a night disturbed by an upset in her own child, that invariably, the child she was foster-mothering had an acute digestive upset with discomfort. It is especially true here in California that women are readily excited and wearied, especially women of the Jewish race, and very many babies who are the victims of pain and distress can be saved that discomfort by insuring tranquillity, diversion, and a full night's rest to the mother, and on the plan calling for ten feedings in twenty-four hours, this is utterly impossible with a result that the milk disagrees and the worried baby further disturbs and distresses its mother, and the vicious circle so

set up produces as an end result, early loss of breast milk and the necessity of resource to artificial feeding.

Furthermore, I feel that there has crept into our management of babies a very vicious practice, and that is the over-regularity that is so often insisted upon. In hospitals where there are a number of babies, as a matter of necessity, one must have regular feeding hours; but in the average home, with the average intelligent mother or good nurse, it is not good practice to attempt this regularity, and it is far from wise to wake a child in order to feed it. If we insist upon a minimum interval between feedings of 2½ or 3 hours and allow the baby to feed when he will and sleep when he will, he usually will provide himself with five or six meals in twenty-four hours, rarely with seven; and his progress will be steady and his life a comfort to himself and his family.

Underfeeding from the breast is usually evidenced by whining discomfort, while the baby who seems to be urgently hungry, crying and shrieking, rolling his head from side to side, waving his hands and legs and often chewing on his fingers until they and his lips are sore, and who gives the impression to his attendants of intense hunger, is most often not at all hungry; but is suffering from an acute indigestion, probably a hyperchlorhydria leading to heartburn, which his little brain can only interpret as hunger. The really hungry child is rarely insistent. However, without doubt, there are certain cases in which the child receives insufficient food in such form that it gives rise to flatulence and green stools and much distention of the abdomen, blueness about the lips, and sleeplessness. This condition is difficult to tell off-hand from overfeeding. But if one will make it a practice in such cases to weigh the child before and after the nursing, it is a very easy matter to determine whether the little one is getting enough food or not.

A breast-fed baby should get about 1/50 of its weight at a feeding, or a little more than 1/10 of its weight in food during the twenty-four hours. This rule was laid down by Apert and seems to be a very useful guide when we are in doubt as to the sufficiency of the daily ration from the breast. Presuming that a baby is getting an insufficient breast ration, less than 1/50 of its weight at a meal, it is not even then indicated to wean the child. Modern practice dictates that the time of nursing should be limited, that both breasts should be used at each nursing, and that the child be offered the bottle at the end of each period of breast feeding. Formerly we allowed two or three nursings a day and gave two or three bottles, but this plan is much less satisfactory. It is well, however, to omit night nursings and let the mother have a good ten hours sleep, for on this sleep the grade of the breast milk very largely depends. Also, one might interject that there is no better way to increase the quality and amount of breast milk than by giving the mother a course of freshly made Blaud pills with or without laxative as her need dictates. As to what should be put in the bottle, used to augment the breast feedings, that will vary with the physician's preferences. Personally, I like a whey cream mixture, making it from 2% to 3% fat, and about 6% sugar, milk or malt.

No matter how earnest we are in our attempt to maintain the breast milk, there will be many cases in which this is impossible, and many others in which we will find babies who have been put on formulae by nurses or mothers without our consent, and who are become intolerable burdens because of distress consequent on indigestion. In a considerable experience, having seen a great many babies fed by a great many men on a large variety of formulae, I have come to the conclusion that the feeding an infant with a formula too high in fat is the commonest error; and next to this comes the too early feeding on a cereal decoction. The supposition that was formerly generally accepted that the ingredient of milk most difficult to digest is the casein is undoubtedly an error. However, it is equally undoubted that there are cases in which a fault in casein digestion occurs and renders the child most unhappy. But these cases are so infrequent, that in looking over my work for the last few years, I can recall not more than half a dozen. The distress from fat is so frequent that I will detail the case of a baby prematurely born at the 8th month which weighed 6 lbs. It was breast-fed for about 10 days when the milk failed. It was then given a weak dilution of milk, cream and water with sugar of milk, fat about 2%, and did fairly well, gaining one-half pound in a week. The attending physician then attempted to increase the strength of the mixture and the child began to cry and kept on crying practically without ceasing day and night. Malted milk was tried and seemed to make the condition worse. A return was made to a milk formula in which malted milk was used in place of milk sugar. While there was some improvement the child was still unhappy. Various changes were attempted and I saw the child first in its 7th week, when it had a weight of but a few ounces more than its birth weight. The stools seemed to be fairly well digested, homogeneous and rarely green. My first thought was that we were dealing with one of the rare cases of proteid intolerance, but on a whey cream mixture with 2% fat, the child was even more uncomfortable than it had been before and yet this mixture is one that, properly used, will restore comfort to most young babies suffering from indigestion, and has been successful in at least 8 out of 10 cases in which I have used it. I would say in passing, however, that in the beginning of such a feeding, it is better to use whey without any cream for 24 hours and on the second day use 1% fat, the third, 1½% and come to 2% fat on about the fourth day. This 2% is the limit of tolerance for most uncomfortable infants. In a few instances the fat may be increased up to 3% or 3½%.

But to return to the infant we were discussing, she was tried on 1%, then on ½% and then on ¼% fat, always with distress. Finally, we came to use skimmed milk in 1/3 dilution with milk sugar. Now, this, of course, is not a food that

will supply the growth needs of a child, nor yet its energy need, and with some hesitation we added a mixture of dextrin and milk sugar used for feeding older children. Fortunately this was well tolerated, and under this feeding the child immediately became comfortable and began to sleep as a child should, 14 to 16 hours in 24. However, she only maintained her weight and did not gain. An attempt was made to increase the fat, and about ⅛% fat was added in the form of cream, and the discomfort that ensued was extraordinary. Fortunately, these children tolerate carbohydrates pretty well, and we are getting a small gain by using an increased amount of the dextrin milk sugar mixture and milk up to the concentration of about ½, that is, one part of milk to one part of diluent. For most babies this is not rational feeding, but in this case it is rational.

There are a number of histories in our case books which parallel this, but to show how empirical the matter of feeding is, while feeding this baby I was called to see another, in which the case history so far as I could make out was identical with this one save that the child was not premature, weighed 9 lbs. at birth and had gained 2 lbs. in its first 6 weeks and had been uncomfortable for only 2 weeks. There was here a history of undoubted overfeeding with fat with the characteristic signs. The success of the feeding outlined above led me to try it in this instance with a result that the bad conditions were very much exaggerated. We then used the whey cream, beginning with 1% and running it up to 2% within 48 hours; since that time the child has gained steadily in weight and has had no distress whatever until the mother attempted to increase the fat, abruptly running it up to 3%, when the whole array of symptoms returned. However, after 24 hours on the 1% it became comfortable and will go along well on a 2% or 2½% whey cream mixture.

A detail of some importance in the preparation of whey cream mixtures might be mentioned here. If the ordinary 4% dairy milk is put in a quart bottle, and the cream allowed to rise, the first 6 oz. removed with a Chapin dipper will contain 16% of fat, 1 oz. of this in a pint, that is added to 15 oz. of whey, will make a 1% fat mixture, 2 oz. to 14, 2%, and so on.

Another common origin of distress at this age lies in the formula that calls for an excess of starch or sugar. The latter most frequently is one in which sweetened condensed milk is an ingredient, and the former, one in which a food of the cereal type is used. Both of these errors in regimen lead to chronic distress of moderate degree very often accompanied by vomiting of sour, watery material from 1 hour to 2½ hours after a meal. Such formulae, too, often give rise to fermentative stools with excoriation of the buttocks and of the anal canal; irritation and inflammation of the latter may take place and be a cause of much discomfort even when the skin of the buttocks is sufficiently tough to resist excorciation there.

In mid-infancy and later infancy there is a very common disturbance of bottle-fed children which shows itself in extreme constipation with fecal masses, which when passed, are characterized by nurses and mothers as "like marbles," very white or perhaps putty-like. Occasionally, when very rich milk is used, these masses will be greasy, crumbly and with the foul odor of fatty acids. Children with this form of constipation are restless, cry easily, do not sleep well, and very many of them have the habit of sleeping on their knees with their nose buried in the pillow. The cause of this is, invariably, the same thing; a larger amount of milk than the child can digest properly. The constipation is the result of soap formation when the high fat milk is used, and there is also present a lot of free fatty acid. The indication here is to reduce the amount of milk, increase the amount of carbo-hydrate. Usually, it is preferable to make this carbohydrate increase in the form of dextrin if need is shown before the 10th month. After this, it is probably better to use cereal gruels, with eggs, fruit pupls, and meat juices to replace part of the milk. In this connection, it is well to emphasize the fact that at no age does a child need more than 32 oz. of milk in 24 hours, and that from the 10th month on, 5 meals a day is as many as a child should have; further, that when a child's energy needs require as much as 32 oz. of milk in 24 hours, it is high time that it was receiving a diet augmented by such things as cereals, zwieback, meat juices, eggs, and so forth.

At the age in which the picture just detailed is common, one also encounters a good deal of discomfort and a great many babies who cry because of bone or muscle tenderness. The picture we have just been considering, may be, and probably is, one of the early stages of rickets, but slight degrees of rickets with mal-nutrition are not at all uncommon, even in the absence of such a clinical picture, and must always be thought of when we are confronted by an uncomfortable baby more than 8 months of age. And it is during this time, too, that the tenderness of scurvy makes itself evident, and although this is not a very frequent finding, it may present a very puzzling problem. I have seen cases in which the subperiostial infiltration instead of appearing in the usual sites, along the lower epiphyses of the femur or about the wrists, occurred along the sacral bone and the ileum. I have also seen patients in which there was no sign of scurvy in the bones, and only the spongy gums, a few ecchymoses where a tight diaper had been pinned, and a hematuria gave evidence of the cause of the child's persistent crying.

A baby with an intussuseption can hardly be classed with an uncomfortable child, but I have seen one instance in which a child of 14 months had been crying for a number of days before it began to vomit and before a physician was consulted. Of course, the child had presented the picture of apparent shock and the cry was not continuous, but spasmodic and repeated, and of a very sharp, ill-sustained character. Another child that was brought to the Lane clinic because it was unhappy was found to have an ischio-rectal abscess

which had been undiscovered. And it is not at all infrequent to find that older children, irritable and unhappy, are the victims of a rectum which partially prolapses and then retracts without being discovered.

Did time permit, there are many other conditions which might be cited as causes of discomfort. Those mentioned have been chosen in order to emphasize the need for a wide investigation when we are dealing with these crying infants. But before closing I must draw your attention to a very frequent and yet rarely recognized cause not only of distress, but of real disability on the part of infants during their second year; that is the inability properly to digest starch. A very large number of infants of this age brought to the pediatrist show a greater or less degree of starch indigestion which results in diarrhea or, in some instances, constipation with fermentation in the intestine that produces the protuberant belly so easily recognized. With this goes a high degree of acidity of the urine, not infrequently acetonuria, and as a result of this acetonuria, irritability, restlessness, broken sleep, a halt in or a loss of weight, and a condition that is alarming to the parents. These children suffer from pain about the umbilicus, and are often among the most uncomfortable little human beings with which we have to deal, and they are not only themselves uncomfortable, but because of their irritibility, they make everyone who comes into contact with them equally uncomfortable, and yet in the whole realm of therapeutic endeavor, there is no class of case that so readily responds to proper regimen and treatment. Most often, these children are called delicate, it is supposed that their appetites are so frail that they must be fed whenever they desire to eat, with a result that in their case, hunger never comes to the aid of digestion. They are the victims of mistaken kindness, forever nibbling at some food. A restriction to three meals a day, limitation of starch, or its presentation in an easily digestible form with the exhibition of diastase for the digestion and iron to remedy the anemia almost always present, will make these little ones rapidly comfortable and rosy.

In conclusion, much of the discomfort suffered by infants is needless and promptly remediable, but the many causes that may lead to distress must be kept in mind and a diagnosis reached by exclusion before the cause can be eliminated with certainty.

## DEATH FOLLOWING AN ANT BITE.*

By T. C. EDWARDS, M. D., Salinas.

On April 18th, 1913, a little girl four years old living in the mountains ran into the house complaining that something was biting her. Upon investigation it was found that she had been bitten or stung upon the chest in several places by a large red ant.

The child was robust with an excellent family history, four great-grandparents still living. That afternoon she complained more or less of the bites but was about as usual the next day. Three or four days after she was bitten her mother noticed that the places where she was bitten had turned bluish and were about the size of a split pea. On April 24th, six days later, she vomited, complained of being cold and her mother noticed small spots coming on her body and extremities which later turned blue.

That night she was "feverish" and on the 25th she was brought to town. She had an axillary temperature of 103.8°, pulse 144, resp. 24. The temperature varied from 101° to 105°. Pulse never below 130, usually 150; resp. 30-40.

She was suffering from a purpura hemorrhagica of a very severe type. She was bleeding from the nose, mouth, stomach, bowels and urinary tract. She was given arsenic and iron, calcium chloride and gelatine with no improvement. I drew a few ounces of blood from the father's arm and gave a half ounce of serum hypodermically which was repeated twice. There was no blood in urine after second dose. She grew steadily worse, however, and died on April 30th. The last three days she was very sore and cried when moved. I find that there has been little written about ant bites and nothing about the venom.

Ants are somewhat like bees. The venom is secreted in the posterior part of the body and in those ants that have stings the venom is injected into the tissues with the sting. In those that use their mandibles as a means of attack the venom is deposited in the bites made by their mandibles, the ants doubling up so as to bring the posterior part of the body immediately over the injury and the venom is squirted into the cuts. In Costellani and Chambers' *Manuel of Tropical Medicine,* concerning tropical ants, we read, "The venom is well known to contain formic acid but there must be more than this in the venom of the tropical species, though nothing is known on the subject." Mention is made in the *London Lancet,* Jan. 10, 1914, of a practice among some tribes of indians of using the dried and mashed bodies of red ants to poison their arrows, but no mention is made of the character of the symptoms produced in those injured by these missiles. Mention is made of symptoms sometimes produced by tropical ants such as chill fever and sometimes paralysis. Reptiles and small animals are said to be killed by being bitten or stung by ants. A brood of young ducks was killed near where my patient lived by being bitten or stung on the feet. One of our prominent stock men who has interests in the Yuma Valley, Arizona, informs me that many suckling pigs are killed there by a large ant. Two letters from the Yuma Valley confirm this statement. The writers both say that the pigs sometimes die in a few hours, but usually live two or three days and finally die with the hind quarters paralyzed. One writer says these same ants destroy alfalfa and grain for a short distance around their holes. London purple, bisulphide of carbon and cyanide are used to kill these ants.

Dr. Margaret Hamilton Smyth of the State Hospital at Stockton reports a pet chameleon killed in a short time by eating a red ant. The symptoms were the same as in the pigs, viz., a paralysis of the hind quarters.

Not knowing of these symptoms I made no investigation to determine whether my little patient had any paralytic condition or not.

Dr. L. B. Bates, bacteriologist in the Ancon Hospital, Panama, has done some experimental

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

work on ants to determine whether they will convey pathogenic bacteria and if so how. His experiments show that ants fed on typhoid and other bacteria must destroy them as no bacteria are to be found in the alimentary canal of ants so fed. He attributes this to the large amount of formic acid to be found in their bodies. The bacteria are, however, carried on their feet and deposited on culture plates over which they have passed. The development of purpuric spots first at the points of injury and later in other parts of the body would seem to show a relationship betweeen the injury and the disease. The time elapsing after the bite before constitutional symptoms arose argues in favor of infection of bacterial origin. Was it, then, some unknown bacteria or some unknown venom that caused the symptoms or were the symptoms simply a coincidence?

The symptoms somewhat resemble Rocky Mountain spotted fever, though no cattle from infected districts have been brought into this range.

The venom of rattlesnake has an action on the blood somewhat similar. That is, it so affects the blood as to cause extravisations, but these are limited mostly to the extremity that is bitten and contiguous parts. Besides, there are active and progressive symptoms immediately following snake bite. Ordinarily any toxic drug or venom, so far as I know, produces symptoms very shortly after its introduction into the circulation and the process of elimination begins at once. If the system is not overwhelmed, the venom is partly destroyed by the psychological action of the blood and partly eliminated, until health is restored.

In our case two or three days intervened between the cessation of local symptoms and the advent of constitutional symptoms. But there were patechial or purpuric spots at the site of the original injuries before constitutional symptoms appeared, and the constitutional symptoms were present before any new spots were seen and before there was any bleeding from the mucous membranes.

Is it possible that any venom might produce in susceptible individuals a slowly advancing destruction of the coagulating elements in the blood which are only manifested in constitutional symptoms after several days, or was there some other infection that did this?

Whatever may be the answer to these questions, our little patient was profoundly intoxicated and lost her life as a result of such intoxication.

## INTRACRANIAL PRESSURE.

By HOWARD C. NAFFZIGER, M. D., San Francisco.

The statement is often made that nerve cases are discouraging. It is said that they are very interesting in a diagnostic way, but that there is not much of value in treatment. The interest is too often confined to the anatomical or pathological findings. There is surely much less ground for such remarks now than ten years ago. Treatment medical and surgical has lagged behind diagnosis more in this than in any other department of medicine.

The great majority of all organic nerve disorders that are benefited by therapy can be divided into two classes. First, syphilis of the nervous system; second, surgical conditions of the nervous system. The treatment of brain and spinal cord syphilis is notoriously unsatisfactory as compared with syphilis of most other parts of the body. It is true that some of the syphilitic nerve cases do not respond at all to treatment. It is equally true that many non-luetic cases are needlessly saturated with iodides, mercury and arsenic. Since this treatment is the only medical resource we have, these patients are overwhelmed with the drugs, whether they are syphilitic or not. As a result in non-specific cases valuable time is lost. Even in specific cases, operative treatment must still be kept in mind.

A young woman with brain syphilis some time ago came to my notice. This woman had been subjected to a most strenuous course of medical treatment. During this time her vision had become so impaired from the optic neuritis that little was left. Following a decompression for the relief of this symptom marked improvement followed. In the course of weeks the results of medication began to show and a subsidence of all symptoms followed. The only relic remaining was much impaired vision. An earlier decompression in this case would have saved most, if not all, of this impairment. Even in the definitely syphilitic cases, such as the one quoted, it is not unusual to find it necessary to employ surgical means to remove a gumma or arrest a rapidly progressing optic neuritis until effects of medication are obtained. The possibility of surgical relief is too late a thought. The number benefited by surgical means is rapidly increasing.

The mechanical conditions which can be remedied by surgical means are then of greatest importance to recognize, and it seems that in the diagnosis of neurological and general medical conditions as well, too little attention has been paid to them. Attention is focused toward making a correct anatomical and pathological diagnosis and valuable time lost, while the urgent symptoms are not given the importance in the clinical picture which they deserve.

A thorough understanding of intracranial pressure is necessary. It is the great guide to treatment in most surgical brain conditions.

Intracranial pressure in its different stages presents varied pictures. Recognition that there is increased pressure is not difficult in the great majority of cases. When it is present immediate treatment must be instituted. Surgical intervention is often required and should always be considered.

Peritonitis has a direct relation to diseases of certain abdominal organs. It demands immediate treatment irrespective of the point where the infection began. Likewise intracranial pressure has a relation to many diseases of the nervous system and demands immediate treatment without regard to the local lesion present. Delay often means blindness or death.

In the abdomen we may divide the signs and symptoms of a ruptured appendix first into those indicating a peritonitis; second, those indicating by

history and location the probable cause of it. The same is true whether the trouble is in the gall-bladder, the stomach or the pancreas. The point is that to a local lesion whether it be in the abdomen or in the skull we have added a menacing wide-spread one. In each case urgent treatment is indicated. The intracranial pressure associated with or dependent upon the local lesion present is the urgent thing and is the first to be relieved. While the abdominal condition usually has that attention which it demands, the intracranial tension is left to continue its course with disastrous results. This neglect is due most often to the fact that signs of pressure are not recognized as such and correctly interpreted.

Pressure manifestations vary tremendously and may show little similarity between acute cases and chronic ones. Between these are varying grades. A host of thorough experimental workers have written on acute intracranial pressure and its accompanying physiological responses. A certain picture has been built up for compression and well recognized. What we do not recognize is that this is the picture of *acute* compression and no other. It is not the picture of chronic compression. In our clinical cases with chronic pressure we should not expect these findings and we do not get them.

The symptoms presented in a case of cerebral hemorrhage with acute compression are entirely different from those in brain tumor, although the pressure in each at the time may be quite the same. Many texts and many persons remark a slow pulse and high blood pressure as being of great value in a diagnosis of brain tumor. These are not at all common in brain tumor. They are rare—so rare that when they occur we should look for some independent general systemic condition to account for them. They are typical signs of acute compression, not of chronic. Late in the course of brain tumor an acute compression may be added to the chronic compression and then these symptoms appear.

In acute compression the slow pulse, raised blood pressure, the Traube-Herring waves, irregular types of respiration, headache, the half-conscious irritability, the tossing restlessness, the drowsiness and stupor or coma are all most valuable symptoms.

In chronic compression are the symptoms given as those of brain tumor—namely, headache, choked disc, nausea and vomiting. These are, of course, strictly speaking symptoms of chronic intracranial pressure. These are all increased by those acts which still further increase intracranial pressure, as straining, sneezing, coughing, stooping, etc. Dizziness and convulsions may also be expressions of the condition. Engorgement of the superficial vessels of the eyelids and scalp have the same significance as engorgement of the retinal vessels. Symptoms less often noted, but common and characteristic, are nose or forehead itching and rubbing, yawning, hiccoughing and sighing. As far as we know, these have no localizing significance. Drowsiness, irritability and mental dulling may all be effects, but appear late. In children separation of the sutures, a cracked-pot percussion note and pressure atrophy of bone, overlying convolutions may be found. It has come more than once to my notice that with the presence of many or all of these signs of chronic compression that doubt has been expressed as to the presence of pressure in the absence of a slow, full, bounding pulse. This pulse, the so-called pressure pulse, is indicative of acute pressure only. When such chronic cases are operated upon we find a terrific increase in tension with a tight, drum-like dura, yet with unchanged blood pressure.

Direct determination of pressure by lumbar puncture is a questionable procedure in all cases of greatly increased intracranial pressure and especially in cerebral tumor. In tumors below the tentorium it is now generally recognized to be absolutely contraindicated. With relief of pressure in the spinal canal the intracranial tension causes the brain stem to herniate into the foramen magnum with fatal result.

In the terminal stages of acute compression and in the later stages of chronic compression many diagnostic signs are lost. In the acute cases nearing the end the blood pressure will drop to normal or below and the pulse rate increases. The protective regulating mechanism of the individual is lost. In the chronic compression cases late in the disease it is common for the headaches and the vomiting to cease, a secondary optic atrophy which has followed a choked disc being perhaps the only sign of intracranial pressure, past or present.

Inferences drawn as to the amount of intracranial pressure present in a chronic case, judging from the severity of symptoms, are as of little value as is a judgment of the exact pathological condition of a kidney from a urinary examination. Consequently, slight changes in the optic disc may be all the findings in a case with well raised intracranial tension. Our judgment in this respect is most apt to be faulty in the case of very slowly growing tumors. With such cases even slight manifestations of pressure are of value, as in a recent case with an enormous brain tumor weighing 146 grams. This man presented focal motor symptoms referable to the right hemisphere. There had never been headache or vomiting. The eye grounds showed only a slight fullness and tortuosity of the veins, but no swelling of the disc. Yet this case at a first stage operation had definite increase of tension, and between the first and second stage operations the pressure was sufficiently high to herniate a large portion of the tumor through the dural opening. This then is a case with pressure, but almost without signs. Minute findings are of value.

Another, carrying a large tumor for at least four years, had no headache, no nausea or vomiting, and yet there was a choked disc of four or five diopters, and at operation tension was compared to that of a very lively new tennis ball.

In acute compression, for example, in fracture of the skull, the value of changes in the eye grounds is slight as compared with their value in chronic cases where they are perhaps the most valuable of all signs. Apart from the diagnostic help, we may have a clearer understanding of many systemic

diseases if we recognize intracranial pressure as a factor. The headaches and certain of the eye changes in nephritis, the nervous phenomena in hypertension, diabetes and alcoholic coma are closely connected with it. It seems probable that there are other factors at work, but we do know that relief of pressure causes these symptoms to subside.

A patient at the University Hospital was referred from the medical service. This patient was in an advanced stage of Bright's disease with usual symptoms. The eye grounds showed a marked edema of the optic nerve, with hemorrhages about the macula. The headaches were severe and the patient deeply stuporous. A decompression was followed by regression of the optic nerve edema, palliation of the headaches, with lessening of the stupor.

Another patient was seen in the deepest alcoholic coma apparently in extremis, with all reflexes abolished. Alcoholism may produce the so-called wet brain. A prompt lumbar puncture in this case with withdrawal of 30 c. c. of clear fluid was so efficacious that at its completion the patient was asking as to where he was and what had happened to him.

In meningitis we are too apt to forget that the infection is largely a self-limited one, and that, excepting those cases dying of a general septicemia or pneumonia, the great majority die from pressure ensuing on an acute obstructive hydrocephalus. In meningitis our aim is twofold: to combat infection and to relieve pressure.

Principle of treatment in all the varieties is the same, namely decompression. Decompression or relief of tension is one of our most reliable surgical principles. It is the factor in the opening of an abscess or the drainage of a peritonitis. The Edebohl's operation of decapsulation of the kidney is a decompressive operation. No doubt decompressions of the heart when enlarged and hampered by its hypertrophy will come into a greater field of usefulness. The principle of decompression is an old one.

Of all the symptoms of subacute or chronic compression, the one of greatest help, but apparently often misinterpreted, is swelling of the optic disc. With a blurring of its margins and a definite rise in its level there is pressure. This does not mean that the primary trouble is necessarily in the cranium. It may be a toxic manifestation of nephritis. Toxins may produce a brain edema or increased cerebro-spinal fluid secretion. Pressure is produced, however, with consequent eye changes, and this swelling of the disc is due to the intracranial pressure rather than to the direct effect of a toxin on the nerve. This is the important point, for we know that following relief of pressure by decompression or other measures this swelling will disappear. Swelling of the disc associated with even the slightest loss of vision makes it at once imperative that pressure be relieved to conserve eyesight, the only exception being those conditions in which it might appear in terminal phases of systemic disease.

Commonly the findings of the ophthalmologist are at variance with those of the neurologist. Different interpretations are placed upon the same findings. Not infrequently the ophthalmologist will dismiss the findings, saying they are toxic manifestations. They do not always recognize intracranial pressure as a link in the chain. This fault must be due to the infrequency with which they check up the pressure findings at the time of operation.

The internist and the Roentgenologist who do not avail themselves of the information to be gained by frequent visits to the surgical amphitheatre are no more culpable than the ophthalmologist who does not avail himself in a similar way in surgery of the brain.

### Discussion.

Dr. H. B. A. Kugeler—I have seen a number of these cases of brain trouble and I want to emphasize two points that the doctor has emphasized. One is the neglect of the choked disc, the neglect of decompression at the proper time, whether or not an exact diagnosis can be made, and the other point is the absurdity of antiluetic treatment because the patient has brain disturbance. If you have ever seen a gumma of the brain—they are hard, stone-like formations—and to think that any medicine that patient is going to take will dissolve that thing is about as absurd as anything we have had handed down in medicine. The only way those gummatous masses can be removed is by surgical treatment, and the only way you can treat a choked disk or relieve the pressure symptoms in the brain is to open that skull before the patient goes blind. I have seen within the last two years at least two patients that have been allowed to go absolutely stone blind without a thing being done to relieve their symptoms, and I think it is time that that sort of thing should stop.

Dr. Kaspar Pischel—I hope the ophthalmologists were not to blame that these patients (mentioned by Dr. Kugeler) were allowed to become blind. Only too often our advice of decompression is not followed. An early decompression can do an enormous amount of good. A short time ago I observed a case of papillitis caused by a tumor which could not be located. After the decompression the papillitis disappeared in about four weeks. I have another case of papillitis in mind in which decompression saved the eyesight and allowed the man to work for two years and a half before the angiosarcoma of the brain killed him.

Dr. O. Tobriner—I noticed the absence in this paper of ear findings in this condition—the examination of the semi-circular canals, especially worked out by Barany. In Vienna hardly a case goes to operation before being sent to the ear clinic for examination of the semi-circular canals and middle ear. More than 80 per cent. of the abscesses in the brain come from the middle ear. In cerebral tumor, situated in the cerebello-pontine angle, one of the first symptoms we notice is a change in the reaction of the semicircular canals. Another early symptom we note in brain tumor is a slight degree of loss of hearing on the side of the tumor.

Dr. Naffziger, closing discussion—About the ear examination, we have gone into those tests as thoroughly as possible. We do not find them of much value in the diagnosis of general intracranial pressure. They are interesting, however, and of value as localizing signs. As they stand at present I do not think they come in as a factor in making diagnoses of intracranial pressure prior to the appearance of some of the other symptoms.

## ECHINOCOCCUS IN CALIFORNIA.*

By J. R. SNYDER, M. D., Sacramento.

The most common cyst of the liver is the hydatid or echinococcus. The cause of the echinococcus cyst is the tenia echinococcus, a parasite found in the upper intestine of the dog, wolf and occasionally sheep. In California it is said that many cysts are found in the lungs of sheep; one instance was related to me in which a raccoon was killed and the hunter said that the liver was filled with "grapes." The ova enters the gastro-intestinal tract of man with food or drink, where the capsule is digested and the embryo liberated. The larva has six hooklets as well as four suckers which aid it in boring through the tissues. It finds lodgment in the various organs, including the liver, kidney, lungs, heart, nervous system, etc. Of 1600[1] cases reported in German clinics, 820 were in the liver, 334 in the kidneys, 137 in the lungs, 122 in the nervous system, 42 in the heart and the rest in other organs. The cyst most frequently occurs between the 20th and 30th years, but it may be found at any age. It shows no preference for sex.

The disease is most common in Iceland,[2] where it is said that one-seventh of all deaths are caused by the echinococcus. In Europe it is not uncommon, in Great Britain and North America it is rare, the majority of the cases being in foreigners. Lyon[3] collected 241 published cases in America in 1902, only one being in a native American.

After the parasite reaches the tissues it loses its hooklets and enters the cysticercus stage. In-

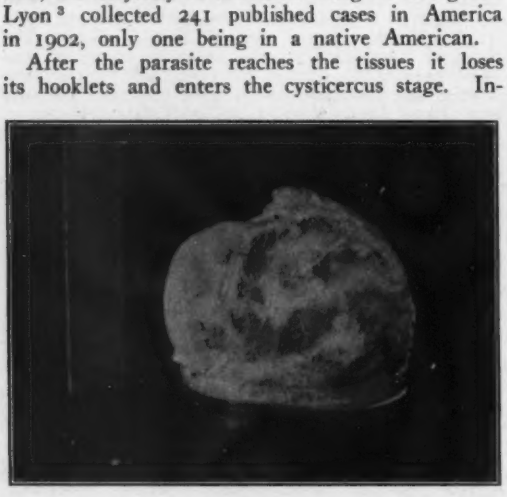

Fig. 1. Uninfected cyst removed at necropsy.

flammatory changes follow and a sac forms which has three layers, externally a fibro-cicatricial layer, an intermediate layer, and finally a germinal layer from which may develop scolices, and these in turn may form the daughter cysts. The contents of the cyst consist of a clear, colorless, transparent fluid, non-albuminous, specific gravity 1.005 to 1.016. If the cyst is fertile it will contain daughter cysts. The heads or solices of the parasites are found free in the fluid. The cysts of the liver are generally in the right lobe and in about 90 per cent. of the cases are solitary.[4]

Small cysts may cause no disturbances, large and growing cysts produce symptoms of tumor; physical signs of course depend on the situation of the growth. The tumor may form a distinct prominence and have a tense, firm feeling sometimes with fluctuation. Attacks of urticaria are not uncommon, especially when a cyst ruptures. A marked eosinophilia is usually present. The cysts are impossible to diagnose when small; when palpable there are suggestive features. They must be differentiated from carcinomatous tumors, from abscesses and from syphilitic tumors.

Superficial cysts may be removed entire; deep cysts are usually treated by formolization.[5] The cyst is injected with a 1 per cent. formalin solution after evacuation. After the sterilization of the contents the cyst is freely incised and the germinal layer removed. Now the wall may be closed and the cyst restored to its original position. Suppurating cysts are treated like abscesses anywhere.

After a search through the "Transactions of the Medical Society of California" and the CALIFORNIA STATE JOURNAL OF MEDICINE, on file at the State Library, I was able to find but one case in a native American from California. This case was reported in May, 1904, in the CALIFORNIA STATE JOURNAL OF MEDICINE, from Los Angeles by Dr. C. W. Murphy.

Case History: R. B., Mexican, male, 26 years old, teamster by occupation. Came to the Sacramento County Hospital, January 13, 1914. Complained of fever and pain in the right hypochondrium. Patient was a native of Arizona.

Family history negative to tuberculosis, cancer or other tumors as far as the patient knew. Did not know about his parents at that time. He had always been well until about three months ago. Patient had been in Sacramento for two months, coming here from Oakland where he had been for four years. During the two years preceding this period he had worked on coastwise boats between San Francisco and Los Angeles. He came to California from Arizona about seven years ago. He had never been out of the United States.

Present illness began three months ago with intermittent pain in the right hypochondrium. It seemed to have no association with taking of food. Frequently radiated to the right shoulder, sometimes extending around to the back. Pain was severe, but patient continued to work until about four weeks before coming to the hospital. He said he had attacks of indigestion with the pain and that he sometimes vomited, usually was constipated. The pain became more severe and boring in character and the patient quit work and consulted a physician. The history covering the next three weeks is very vague. The patient appeared at the hospital January 13, 1914, at 4 p. m. He seemed to be in considerable pain, lay on the left side with knees drawn up, seemed to have lost some weight, was slightly jaundiced. Temperature 102 degrees F., pulse 92, respiration 24.

Physical examination showed eyes normal, reacted normally to light and accommodation, conjunctivae bile stained. Nose normal, tongue coated, teeth excellent, throat normal, no goiter. Lungs and heart normal. Abdomen, slight general rigidity which was more marked in the upper right quadrant. At the upper third of a line extending from the umbilicus to the costal margin, a round, hard, non-fluctuating mass presented; it was slightly tender on pressure. Liver was enlarged downward. Further examination negative. Blood examination, reds about normal, white cells 17,000. Differential count on 500 cells showed but two

* Read before the Sacramento Society for Medical Improvement, April 21, 1914.

per cent. eosinophiles. Urine, amber, acid, 1.024, small trace albumin, no sugar, no casts, no blood, no pus, no bacteria, a small amount of bile.

A provisional diagnosis of gall stones with infected gall bladder was made. Hydatid cyst was mentioned but not expected. Patient was prepared for operation the day after admission and was operated upon January 15. Right rectus incision was made over the gall bladder region. A round white mass about two inches in diameter presented. It was situated on the anterior surface of the liver about two inches above the gall bladder. The capsule was punctured with a trochar and about five ounces of a clear fluid containing sago-like granules was withdrawn. Enucleation of the cyst wall was accompanied by profuse hemorrhage, so profuse in fact that the patient seemed to be in considerable danger. Fifteen cigarette drains and two rubber tubes surrounded by iodoform gauze were sewed in.

Patient's temperature rose steadily for three days when it reached 104.2° F. The next day his legs showed some edema. Temperature began to come down, but pulse steadily rose. Abdomen became distended. Leukocytosis remained high and eosinophiles increased after the operation. Patient died January 27, eleven days after the operation, thirteen days after admission.

Necropsy: Twelve hours post mortem.

Peritoneal cavity; peritoneum smooth and dull. Cecum and appendix apparently normal. Many adhesions between liver, stomach and spleen. Large abscess between these adhesions and the diaphragm, abscess being connected with a large abscess in the posterior part of the left lobe of the liver. The abscess was surrounded by a capsule like those around the cysts. On the surface of the right lobe of the liver and posterior part there presented another cyst wall. This we were able to dissect out entire. (See cut.) Gall bladder was normal. Several small abscesses in the spleen. The transverse colon was bound to the stomach by fresh adhesions. Heart apparently normal. Lungs showed some edema. Kidneys both large and showed evidence of cloudy swelling. Further examination negative.

Diagnosis: Large infected hydatid cyst in left lobe of the liver, one large cyst in right lobe removed, another large cyst in right lobe. Edema in both lungs. Acute parenchymatous nephritis.

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2. Morris: Ashurst's International Encyclopedia of Surgery, Revised Ed., New York, 1888, V, 644.
3. Lyons, cited by Osler: Practice of Medicine, p. 34.
4. Deaver and Ashurst: Surgery of the Upper Abdomen, Vol. 2, p. 191.
5. Quenu: Bull. Soc. Chir. Paris, 1903, xxix, 719.

## A BRIEF SUMMARY OF THE REGISTRATION LAW AND THE REQUIREMENTS FOR ACCREDITING SCHOOLS FOR NURSES.*

By ANNA C. JAMMÉ, Director, Registration Department.

Chapter 319 of the Statutes of 1913, known as the Nurses' Registration Act, became effective August 20th. In accordance with the provisions of the Act, the State Board of Health established a bureau for registration of nurses, the work of which was started early in October.

The law provides for the examination and registration of applicants who are graduates of accredited training schools for nurses and for the issuance of a certificate which will entitle the nurse to be known as a Registered Nurse. It also places within the State Board of Health the power to revoke a certificate for any reason that renders a nurse unfit or unsafe to care for the sick, after full and fair investigation of the charges made against her. A penalty is attached for any person not holding a certificate of registration, who uses the term "Registered Nurse" or who uses the letters "R. N." after his or her name or for violating any of the provisions of the Act. There is provided a period of waiver until July 1, 1914, during which time applicants who are graduates of a reputable training school, connected with a general hospital, may be registered without examination.

The purposes of this law are:

1. To provide a definite educational standard of teaching and training in schools of nursing and to fix the minimum requirements for graduation.
2. After July 1, 1914, to register upon examination only graduates of schools maintaining the standard established.
3. To establish and maintain a public register of nurses.

The law states that the training school must be attached to, or operated in connection with, a hospital or hospitals. The hospital therefore becomes the first consideration.

In the establishment of a school for nurses, the hospital should offer adequate facilities for maintaining a school. These facilities include not only the capacity of the hospital, but the daily average number of patients, which if too restricted in numbers—that is, say below twenty-five—can not afford the requisite opportunities for observation and experience.

The hospital is and always will be the only training place for nurses. The school is not an adjunct, but has a definite relation to the hospital in its function, which is twofold—first, that of providing a nursing staff for the hospital, and, second, that of training and educating nurses for the community.

The law further states that a general training should be given. The nature of the service in the hospital, therefore, becomes the second consideration. Provision, however, is made that this training shall be obtained in a "hospital or hospitals." With the increasing tendency toward specialization, the difficulty of each hospital in meeting the requirement of general training may be overcome by affiliation with other hospitals, and, therefore, gain for the student a practical groundwork in the major requirements, medicine, surgery, obstetrics and pediatrics.

The period and the course of study is definitely laid down by the law on a systematic theoretical and practical course covering three years.

The theoretical course of instruction contemplates a properly graded schedule covering the subjects already mentioned.

The practical course of instruction implies an experience and a just division of time in each department of service, embraced in a general training, which may be as follows:

1. Preparatory course.....3 months
2. Medical nursing.....4 months
3. Surgical nursing.....4 months

* Reprinted, by request, from the March 1914 number of the Pacific Coast Journal of Nursing.

4. Operating rooms, dressing rooms and dispensary.....4 months
5. Obstetrical nursing.....4 months
6. Children .....3 months
7. Contagion .....3 months
8. Dietetics .....2 months
9. Night duty.....4 months
10. Vacation .....2 months
11. Open time.....3 months

In the establishment of a school and a definite curriculum of lectures, classes and demonstrations, the teaching staff and corps of lecturers and instructors becomes the next consideration. Upon the superintendent or principal of the training school and her assistants rests largely the clinical instruction of the students. That this teaching staff shall be adequate and prepared for the teaching of nurses will to a great extent be a guaranty of the fitness of the school to graduate women in nursing.

Instruction to be effective implies equipment and space. A class-room, lecture-room, a laboratory and a quiet study-room or library are at least essential to the fitness and dignity of a school.

On the requirements for entrance and the conditions of the home life of the nurse during her course of training, the law is silent.

Upon the school, therefore, rests the responsibility of the character of the women admitted. If the educational requirement is low, the character of the instruction is usually of low grade and acts as a deterrent to the discriminating applicant. We may concede that the requirements of preliminary education should be at least what is required in other technical schools of the State, viz.: a high school course or its equivalent. This should insure the capability to grasp intelligently the subjects involved, and would bring a maturity of mind and physique to the responsible and exacting demands of nursing.

The living conditions and social life in the nurse's home should compare favorably with that of the college and boarding school. The government of the home may be largely in the hands of the students themselves, who should be able to maintain its dignity and tone.

In establishing a standard for accrediting schools, it will at first be impossible to make the requirement as high as that maintained in schools favored by location and facilities, both educational and financial. By establishing a reasonable standard it is endeavored to meet and assist the other schools in preparing their graduates for examination and registration.

Registration, however, will not guarantee a nurse nor vouch for the finer qualities of education and character that go to make an efficient worker in the many lines for which a nurse by her general training is peculiarly fitted. It is, however, evidence that she has received ample instruction in theory and practice.

Thoughtful women of education in selecting a career will be more likely to adopt that of a nurse when it has the advantage of state regulation and state protection. It will be borne in mind that the demand is insistent and urgent, especially from surgeons and obstetricians for more thorough preparation, in the training school. Public health service is also making very strong demands, recognizing that the nurse has become an essential and indispensable part of public health work, especially tuberculosis, school nursing and infant mortality. Public health organizations are urging the training schools to provide instruction that will enable their graduates to render efficient service in the various fields of modern sanitary science. In many instances these organizations are placing at the disposal of the schools, facilities for study and practical training for student nurses, who desire later to engage in public health work.

In conclusion, it may be stated that the energies of the Bureau of Registration shall be directed towards the following objects:

1. To maintain a good ethical and educational standard in nursing.

2. To assist in improving and advancing methods of teaching in training schools.

3. To aid affiliation between schools and to encourage preliminary education, relative to the study of nursing in high schools and colleges.

4. To encourage the special preparation of nurses for teachers of nursing.

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## SOCIETY REPORT

### ORANGE COUNTY.

The following officers were installed at the Twenty-fifth Anual Banquet, May 5th, 1914: Dr. D. W. Hasson, Buena Park, President; Dr. J. J. Clark, Santa Ana, Vice-President; Dr. John Wehrly, Santa Ana, Secretary; Dr. H. S. Gordon, Santa Ana, Treasurer. After the installation Dr. Jos. M. King gave a very interesting fifteen minutes' talk on his recent European trip. Dr. John L. Dryer gave a short history of the Orange County Medical Association for the last twenty-five years. Of the eleven original members there were only three left, Drs. J. L. Dryer, C. D. Ball and J. P. Boyd—four of the eleven members died and four removed to other fields.

The following were elected as new members: Drs. Albert Osborne and W. W. Davis of Anaheim.

JOHN WEHRLY, Secretary.

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### SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

Regular meeting May 19th, 1914, Hotel Sacramento, 8:40 p. m., President J. W. James in the Chair, twenty-five members present. Minutes read and approved.

The meeting was devoted to reviews of current medical literature. The following members gave reviews of the following journals:

J. B. Harris, Surgery, Gynecology and Obstetric.
E. T. Rulison, N. Y. Medical Journal.
M. Seavy, Interstate Medical Journal.
E. W. Twitchell, Munchener Medizinische Wochenschrift.

Discussion by Drs. Jones-Beattie.

Dr. Beattie suggested filing Journals of members at City Library.

Dr. W. Cress elected to membership.

Dr. G. Wilson elected to membership.

Adjourned 10:30 p. m.

F. F. GUNDRUM, Secretary.

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## PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

### Section on Medicine, May 5th, 1914.

1. The Diagnosis of Diabetes. Thomas Addis.

2. The Utility of Catarrhal Vaccine. Francis Williams. Discussed by Cullen Welty, K. Pischel and A. A. O'Neill.

3. The Disturbance of Nitrogen Metabolism in Anaphylaxis. Discussed by W. Ophuls.

### General Meeting (Held in Kohler & Chase Hall), May 12th, 1914.

1. Advantages of Screen over Plate Work in Gastro-Intestinal Diagnosis. (Illustrated by lantern slides.) W. C. Alvarez.

2. Industrial Insurance in California. H. B. A. Kugeler. Discussed by H Herrington, F. Williams, M. Gibbons, G. C. Macdonald, J. Graves, C. G. Kuhlman, F. C. Keck, G. Mize, F. P. Topping, D. B. Plymire and G. G. Kenyon.

### Surgical Section, May 19th, 1914.

1. Pseudo Cysts in Chronic Pancreatitis. H. A. L. Ryfkogel and G. H. Taubles.

2. Points of Interest in Technic of Gastro-Enterostomy. P. Campiche. Discussed by D. Tait and J. H. Barbat.

### Eye, Ear, Nose and Throat Section, May 26th, 1914.

1. Exhibition of Operated Tonsil Cases. G. W. Caldwell.

2. (a) Labyrinthine Fistula.
   (b) Heath Operation.
   (c) Paralysis of Left Vocal Cord.
   (d) Serous Labyrinthitis. H. B. Graham.

3. Double Dacryostenosis. L. D. Green.

4. Case of Deafness on Right Side resulting from Simultaneous Blow in Front of and Behind Left Ear. Fracture of Petrous Portion of Temporal Bone. C. F. Welty. Discussed by S. Beasley, O. Tobriner, H. Horn and J. J. Kingwell.

5. Recurrent Laryngeal Nerve Paralysis due to Aneurysm. A. Baer.

6. Pain in Ear—Reflex from Nose. H. Y. McNaught.

7. Exhibit of Ear Case for Diagnosis. J. J. Kingwell.

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## TULARE COUNTY.

At the regular meeting of the Tulare County Medical Society held May 5, 1914, the following resolution was passed:

It is resolved by the Tulare County Medical Society that our members shall cooperate with the State Industrial Accident Commission in working out the Workingmen's Compensation Act under the fee bill proposed by them and that no member shall contract with any insurance company for services at any less rate than set forth in that fee bill.

A. W. PRESTON, Secretary.

## BOOK REVIEWS

**"Obstetrics."** Edited by Jos. B. DeLee. Practical Medicine Series. 1913, Vol. VII. Year Book Pub. Co., Chicago. Price $1.25.

This volume of 232 pages consists, for the greater part, of abstracts of articles published in journals both at home and abroad. Like last year's volume the contents is divided into four parts, namely, Pregnancy, Labor, Puerperium and New-born. The question of Serodiagnosis of Pregnancy is gone into at great length. The editor's comment beginning on page 23 sums up the principle involved. For one who hasn't the time to keep up with the literature, this compact little volume offers a means of getting most of the up-to-date information in a very easy way. L. I. B.

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**A Synopsis of Medical Treatment.** By George Cheever Shattuck, M.D., Assistant Physician to the Massachusetts General Hospital. Second Edition, Revised and Enlarged. Boston: W. M. Leonard, Publisher. 1914.

This book has the virtues and the faults of compendia of its kind. For those who like their knowledge served in tabloid form it ought to prove useful, since there is a good deal of information in easily accessible form. The chief fault is in the lack of fulness, both as to matter included and as to explanation of statements made. For example, the unexplained statement as to typhoid fever that "Coleman's diet, if used indiscriminately, may perhaps cause death" can hardly be anything but mystifying.

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**A Treatise on Diseases of the Skin.** For the use of advanced students and practitioners. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Seventh edition, thoroughly revised. Octavo of 1250 pages, with 334 text-illustrations, and 33 full-page colored and half-tone plates. Philadelphia and London: W. B. Saunders Company. 1914. Cloth, $6.00 net; Half Morocco, $7.50 net.

This deservedly popular treatise is probably the most widely used of text-books on cutaneous medicine in the English language. Its scope is such that it is not only very useful to the general practitioner, but is of value as a reference book for the specialist. The numerous excellent illustrations add greatly to the value of the volume. This edition (the 7th) contains much new matter, bringing it up-to-date (November, 1913). H. E. A.

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**The Psychology of Insanity.** By Bernard Hart, Cambridge Manuals of Science and Literature. Cambridge University Press. 1912.

This little volume of 172 pages is one of the most interesting treatises on the subject of the psychology of the insane that the reviewer has ever read. An analytical development of the history and psychological manifestations of the insane is very briefly given in a delightful style. The influence of the Freudian school on the trend of modern abnormal psychology is felt throughout the work, but, what is rare among the followers of Freud, no didactic statements are made. Each of the elements entering into abnormal states, viz., complexes, conflict, repression, dissociation, projection and phantasy, are given separate chapters and are clearly defined and explained. In all, it is a valuable book for any student of psychology or of medicine.

**Principles and Practice of Hydrotherapy for Students and Practitioners of Medicine.** By George Knapp Abbott, A.B., M.D. Second Edition Revised and Enlarged with 128 Illustrations. The College Press, Loma Linda, Cal. 1914. Price: Cloth, $4.00; Leather, $4.75.

A painstaking compilation of the theories and practices of hydrotherapy. As the author himself states, no claim is made to originality. Much of the theoretical discussion is of facts fairly obvious, but the book is to be commended in using many of the exact quantitative methods and graphic representations of modern physiology. One of the opening sentences contains the gist of the whole book: "Hydrotherapy consists chiefly in the application of heat and cold to the body by means of water." The wisdom of some of the procedures advocated may be questioned, e. g. the use of friction with the cold mitten in pericarditis. On the whole the explanations of technic are clear and the book should be useful. H. S. F.

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**Disease and Its Cause.** By W. T. Councilman, A.M., M.D., LL.D. Published by Henry Holt & Co., N. Y. 1913.

This little book, which is one of the volumes of the Home Library, serves admirably the purpose for which it was intended. To the lay reader it gives a clear, concise account of the most common and important causes of disease, written in an interesting style. It should clear up in the layman's mind many false and popular notions about disease, and should make him appreciate more the difficulties which medicine in the past has overcome. It describes, in an interesting manner, the past achievements of medicine and indicates some of those it may hope to accomplish in the future.

To the beginning student of medicine and to the nurse it will prove a book of considerable value as an introduction to the general subject of medicine, to the physician as a stimulus to look up original sources. Dr. Councilman, by reason of his broad views on the science and philosophy of life under normal and abnormal conditions, is admirably suited to the presentation of this subject and has achieved his task. R. H. M.

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**Blood Pressure in General Practice.** By Percival Nicholson, M.D. Published by J. B. Lippincott Company, Philadelphia and London. Price $1.50.

Dr. Nicholson's book is a concise and practical treatise for the general practitioner. After briefly reviewing the history and methods of obtaining blood pressure and a comparison of the different forms of apparatus, including his own, he goes into detail about the importance of blood pressure in the different diseases, which, for easy reference, are arranged alphabetically. He includes chapters on the significance of blood pressure in surgery, anesthesia and life insurance examinations. The work is carefully indexed and ends with a bibliography. He eliminates the purely theoretical side of the subject, as his object is to make his work "aid the general practitioner to a better understanding of the methods of determining the principles and some of the practical applications of blood pressure determinations." The information he has given in this praiseworthy small volume would take a long time to acquire by reading the general literature on the subject. E. H. W.

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**The Clinics of John B. Murphy, M.D.,** at Mercy Hospital, Chicago. Volume III, Number II. Octavo of 213 pages, 55 illustrations. Philadelphia and London; W. B. Saunders Company, 1914. Published Bi-Monthly. Price per year: Paper, $8.00; Cloth, $12.00. W. B. Saunders Company, Philadelphia and London.

Contents—Murphy's Clinical Talks on Surgical and General Diagnosis. The Examination and Analysis of Cases. Empyema. Abderhalden Test in Tubal Pregnancy. Three Cases of Ectopic Testis—Cholelithiasis: Pericholecystitis; Stones in Cystic Duct; Cholecystectomy. Acute Pancreatic Cyst. Duodenal Ulcer; Extensive Adhesions; Dilated Stomach; Gastro-enterostomy. Description of Dr. Murphy's Button Operation. Goitre—A Talk on the Embryology, Anatomy and Physiology of the Thyroid. Tuberculosis of Kidney: Nephrectomy. Vesical Papillomata. Amputation Neuroma with Ascending Neuritis; Division of Right Half of Cauda. Neuroma of the Ulnar Nerve, Result of Cicatricial Compression Following Unrecognized Fracture. Neuroma of Ulnar Nerve, the Result of Trauma Incident to Fracture at Elbow. Internal Hemorrhoids with Severe Bleeding at Stool, the Result of a Small Slit in a Hemorrhoidal Vein.

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**A Text-Book of the Practice of Medicine.** By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine, Medico-Chirurgical College, Philadelphia. Eleventh Edition Thoroughly Revised. Octavo of 1335 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $5.50 net; Half Morocco, $7.00 net.

The standard character of this work, which is now in its eleventh edition, is generally well-known and most of us, I think, still feel the necessity of facility for ready reference which an up-to-date, single volume on the practice of medicine affords us at those times when it is more convenient not to consult one of the standard systems. In addition to the substantial subject-matter of former editions, much has been introduced to modernize the book as far as possible. Numerous new signs and tests, some of which, in the light of further advance, are becoming valueless, are mentioned, and, on the other hand, much that is permanent regarding the heart, parathyroids and other organs has been wisely added. In the way of therapeutics the newer uses for benzol, urotropine, sodium cacodylate, salvarsan and the Lambert treatment for morphinism may be mentioned. An important omission, however, is the work of Rowntree and Geharty on phenolsulphonepthalein and of the recent discoveries regarding the etiology of poliomyelitis, rabies, pertussis, etc. On page 492 arsenic should be mentioned as one of the causes of bronzing, although it appears on page 1281. However, for a single volume one may well be satisfied with its contents, and as a text-book this work must be regarded as being highly efficient. H. F. A.

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**A System of Surgery.** Edited by C. C. Choyce; Pathological Editor, J. Martin Beattie. In three volumes. Volume III. New York, Funk & Wagnalls Company. 1914. (Obtainable at The Emporium.)

Now that the third and concluding volume of this most admirable work is at hand, the reviewer can only emphasize the enthusiastic praise with which he greeted the two preceding volumes. As a complete compendium of modern surgery and surgical treatment, considered from the rational basis of surgical pathology, it fulfills every demand that any text-book can supply. This system, though contributed to by many writers, makes pathology first, last and all the time the keynote of its theme. Therefore its value will not be transient or merely for the present moment, but it will remain for

many a long year a safe and satisfactory source of information for surgical diagnosis and treatment, based on the foundation of surgical pathology. It is not a manual of operative surgical technic, but tells when and how and how much surgery is required in a given condition. This concluding volume covers the following subjects: cardio-vascular system; lymphatic system; the neck; nose and accessory sinuses; ear, pharynx, naso-pharynx and larynx; lower air passages and esophagus; lungs and pleura; the nerves; scalp; skull and brain; spine and spinal cord; the jaw; skin and subcutaneous tissues; muscles; fasciae and tendons; bursae; bones; fractures and separated epiphyses; the joints; orthopedic surgery. With the possible exception of the section on orthopedic surgery, which cannot compare with either the American or even the German writings on this subject, especially as regards treatment and prognosis, every other subject is handled in a way to make it a worthy portion of a really valuable text-book on surgery.

G. H. T.

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**The Medical and Sanitary Inspection of Schools.** By S. W. Newmayer, A.B., M.D., in charge of the Division of Child Hygiene, Bureau of Health, Philadelphia. 12mo, 318 pages, with 71 engravings, and 14 full-page plates. Cloth, $2.50 net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

In his treatise "Medical and Sanitary Inspection of Schools," Newmayer has quite thoroughly reviewed the work that has been done by the pioneers in this field. This book will prove of great assistance to nurses and doctors engaged in the actual work of inspection. It gives details of methods employed in examining school children for both physical and mental defects. This feature of the book is especially commendable. With the systems, charts and directions given, a governing body can inaugurate a system of inspection and sanitation, while the doctors and nurses can intelligently carry out its details. The methods employed successfully in Philadelphia and New York are described in detail and may serve as guides. The importance of skilful medical inspections is dwelt upon and the point is emphasized (as I think it will be demonstrated in other departments of medical activity) that the best medical men will not be available if their whole time is demanded. The importance of "a division of labor" is stated in urging that most of the routine work should be performed by nurses. In fact, nurses as inspectors are at least as valuable as physicians. Where funds are not available to pay nurses, their duties may be assumed by instructed teachers in the schools. If money is not available with which to pay doctors, volunteers may be secured. The deficiencies of the book are attributable to the immature development of the subject. Systems, methods and objects to be striven for are still in experimental stages.

S. B.

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**Kurzer Leitfaden der Psychiatrie für Studierende und Arzte.** Von Dr. Ph. Jolly, Assistenten an der Psychiatrischen und Nervenklinik (Geh.-Rat Prof. Anton) in Halle a S. Bonn, 1914. A. Marcus & E. Webers Verlag. Preisbrosch 4. Gebunden 4.80.

This book takes a place between the large works of psychiatry and the small compendia. The author avoids theoretical discussions and deals in the main with well-established facts. The book is divided into two parts. The chapters of the first division contain a short review of the history, of the general etiology, symptomatology, diagnosis, pathology, prognosis and therapy of Psychiatry. This first part is exceedingly well written, particularly the chapter on Symptomatology. The second division deals with the different forms of insanity following in the main the nomenclature of Kraepelin.

In describing the Dementia Precox group, the important work of Jelliffe, Hoch and Meyer in this country and Jung in Zürich are omitted. The psychogenetic mechanisms underlying the condition and Abderhalden's investigations in reaction ferments in these cases are not mentioned. The Paranoia group is rather superficially treated, while the author devotes a large space to Dementia Paralytica, a chapter very well written, dwelling upon the differential diagnosis and going into details in regard to the luetic origin and the importance of the so-called Four Reactions (Wassermann in the blood; Lymphocytosis; Globulin reaction; Wassermann in the liquor cerebrospinalis).

In the chapters on neurasthenia, hysteria and other psychoneuroses, the names of Janet, Freud and Jung are painfully avoided. One does not need to be a blind disciple of Freud to admit the great importance of his investigations for the understanding of the psycho-neuroses and also of the psychoses. The mechanism of the delusions of the insane, e. g., can hardly be explained without Freud's theories. The index of this book is remarkable for its completeness. In conclusion, the reviewer recommends the work as a valuable résumé, more for the use of those who are familiar with psychiatry than for the students and physicians unacquainted with this specialty.

C. RENZ.

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**Diagnosis in the Office and at the Bedside.** The Use of Symptoms and Physical Signs in the Diagnosis of Diseases. By Hobart Amory Hare, M. D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College of Philadelphia. New (7th) edition, thoroughly revised and rewritten. Octavo, 547 pages, with 164 engravings and 10 full-page plates. Cloth, $4.00 net. Lea & Febiger, Philadelphia and New York, 1914.

As a modern diagnostic work this book is rather a disappointment, especially if one were forced to depend upon it alone. This is mainly due to the method of arrangement, it being rather questionable—in the reviewer's mind at least—to place the bulk of nerve diagnosis in the sections on the extremities and the skin, although from a purely symptomatic point of view it may be logical. This defect is obviated in a measure by a most voluminous index which occupies exactly 10% of the entire work. A minor fault is the occurrence of a considerable number of inaccuracies, chiefly in the form of dogmatic statements.

The book, however, is sketchily and most entertainingly written and contains a fund of information of that valued sort obtainable only from a preceptor of wide experience. Indeed, one gains the impression of coming into personal contact with the writer, a delightful feature which is unfortunately a minus quantity in most technical works.

As regards the illustrations a fewer number than usual of familiar faces are seen, although one or two are positively mediaeval.

On the whole the book is better adapted to the older practitioner who desires a short cut to diagnosis than to the student or recent graduate who has been trained in the more modern methods of routine history taking and examination.

L. H. B.

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**Theorie und Praxis der Blutentziehung.** By Prof. Dr. Heinrich Stern, Verlag von Curt Kabitzsch, Wurzburg. 1914. Preis broschiert Mk. 3.50, gebunden Mk. 4.50.

This interesting monograph deals with the his-

tory of the ages-old practice of blood-letting and its modern application in the light of present day knowledge. Varying from the height of popularity to the depth of unpopularity, venesection has touched both extremes several times during the years covered by written history. Its value to medical science must lie somewhere between these extremes, and we believe Prof. Stern has rendered a good service to present day therapeutics by again bringing to our notice this valuable remedy and its indications. The technic is simple and easily acquired. The field of application is limited to certain diseases of the respiratory, circulatory and urinary systems, and, secondarily to the nervous system. In addition, this very useful procedure is described in its application to eclampsia and various poisonings. The value of this brochure seems to lie in its message to the present day practitioner that this ancient and much abused means of relieving human ailments has not lost its potency for good even though its field has been much restricted.

Professor Stern's work, though evidently written by an enthusiast, contains a great deal of interesting, if not practically useful, material and shows a careful and comprehensive study of literature, both lay and medical. G. H. T.

## LUSK ON NUTRITION.

The Yale Press has now in active preparation "The Fundamental Basis of Nutrition" by Graham Lusk. In this concise and readable manual Dr. Lusk discusses the historical study of nutrition and modern investigation in that field. He includes very important statistics showing how men in different occupations should be variously nourished and how the maximum number of proteins may be obtained at a minimum cost. The whole presents the principles of nutrition which our generation has done so much to discover and in a form to benefit the layman. As the author says: "It seems as though mankind had a right to a knowledge of the value of the foods which a bountiful Nature has provided for his use. Even among educated persons one may hear the grossest errors of judgment regarding the nutritive value of a hen's egg and few of those who eat in restaurants realize that the greater quota of nourishment which is brought to them lies not in the specific dish served but in the bread and butter which ostensibly is presented as a gift."

## DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(This Department will be pleased to supply information concerning products passed or rejected by the Council on Pharmacy and Chemistry of the A. M. A., or submit queries to the Council when information is not available.)

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

SODIUM BIPHOSPHATE, Squibb.—This nonproprietary form of sodium acid phosphate has been accepted for inclusion with New and Nonofficial Remedies. E. R. Squibb & Sons, New York (Jour. A. M. A., May 2, 1914, p. 1401).

NORMAL HORSE SERUM with Chloroform as a Preservative.—Marketed in vials, each containing 50 Cc. H. M. Alexander & Co., Marietta, Pa.

NORMAL HORSE SERUM without Preservative.—Marketed in vials, each containing 50 Cc. H. M. Alexander & Co., Marietta, Pa. (Jour. A. M. A., May 2, 1914, p. 1401).

EREPTON.—A meat product consisting largely of the amino-acids produced by the digestion of meat. Erepton is said to be useful in cases in which it is necessary to substitute a perfectly digested food for the product of natural digestion in cases of gastric or intestinal indigestion and for the purposes of rectal alimentation. Farbwerke-Hoechst Co., New York (Jour. A. M. A., May 16, 1914, p. 1559).

ACNE SEROBACTERIN, MULFORD. This is a sensitized acne vaccine. H. K. Mulford Co., Philadelphia, Pa.

COLI SEROBACTERIN, MULFORD.—This is a sensitized coli vaccine. H. K. Mulford Co., Philadelphia, Pa.

NEISSER SEROBACTERIN, MULFORD.—This is a sensitized gonococcic vaccine. H. K. Mulford Co., Philadelphia, Pa.

PNEUMO SEROBACTERIN, MULFORD.—This is a sensitized pneumococcic vaccine. H. K. Mulford Co., Philadelphia, Pa.

STAPHYLO-ACNE SEROBACTERIN, MULFORD.—This is a sensitized staphylo acne vaccine. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., May 16, 1914, p. 1559).

NEW BORNYVAL.—New bornyval is borneol isovaleryl glycolate, the isovaleryl glycolic acid ester of borneol. Being more resistant to the gastric fluids than bornyval, it passes the stomach unchanged and is said therefore to be less irritating than bornyval. Its properties are similar to those of borynval and other valerian preparations. New bornyval is an almost tasteless and odorless liquid, insoluble in water. It is sold also in the form of Bornyval Pearls, each containing 4 minims of New Bornyval. Riedel & Co., New York (Jour. A. M. A., May 23, 1914, p. 1637).

LIQUID PETROLEUM OR "RUSSIAN MINERAL OIL."—A report of the Council on Pharmacy and Chemistry points out that petroleum oil was used as a medicine by the ancients and that the product "liquid petrolatum" is now on the market under a host of proprietary names and is official in most pharmacopoeias. It was at one time used in the treatment of tuberculosis and as an adulterant of fats and oils on the assumption that it was assimilable. It is now known to pass the system unchanged and has recently been highly lauded as a particularly harmless laxative in the treatment of habitual constipation. As the U. S. P. definition of liquid petrolatum permits the use of rather widely varying products and as there is some difference of opinion whether a light or a heavy oil is preferable, the Council recommends that physicians desiring the water white, non-fluorescent (Russian) mineral oil use the term **petrolatum grave** or **paraffinum liquidum**, B. P. if the heavy product preferred by Sir F. Arbuthnot Lane is desired; and **petrolatum liquidum laeve** if the light variety is desired (Jour. A. M. A., May 30, 1914, p. 1742).

ANTIMENINGITIS SERUM.—The untoward or fatal effects sometimes following the use of antimeningitis serum are probably due to the toxic action of the preservative contained in it or to increased intracranial tension due to its administration. The technic of its employment should be improved rather than its use abandoned. The dangers which may arise from its use are not to be feared as much as the disease itself (Jour. A. M. A., May 23, 1914, p. 1661).

PITUITARY EXTRACT.—The use of pituitary

extract as an oxytoxic must be considered in the experimental stage. A large number of cases have been reported in which untoward effects from the use of various pituitary extracts (including pituitrin) were obtained (Jour. A. M. A., May 2, 1914, p. 1420).

PANCREATIN.—Long and Huhleman report that mere traces of hydrochloric acid will destroy the ptyalin of pancreatin, that pancreatin of commerce—which often is not pancreatin but merely the dried pancreas gland—is practically devoid of lipase, the fat digesting ferment, and that its tryptic ferment is likely to be destroyed by the action of the pepsin and hydrochloric acid during its passage through the stomach (Arch. Int. Med., Feb., 1914, p. 314).

VALENTINE'S MEAT JUICE.—Four years ago an examination by the Council on Pharmacy and Chemistry showed that Valentine's Meat Juice was not a meat juice, but had the character of a meat extract instead, while on the basis of the claim that it was a meat juice extravagant assertions as to its nutritive value were made. The product being a meat extract, was practically devoid of nutrient qualities. As Valentine's Meat Juice is still widely advertised the Council deemed a re-examination important. This re-examination shows that in general it has the composition now as then, and that the same unwarranted claims are still made for it (Jour. A. M. A., May 2, 1914, p. 1419).

BROMIDIA (Battle & Co.).—A report of the Council on Pharmacy and Chemistry points out that while the name suggests bromid, Bromidia is essentially a chloral preparation. This nostrum illustrates the need of the Council's rule under which recognition is refused to pharmaceutical mixtures whose name does not indicate their most potent ingredients. While the chloral content of Bromidia has been given considerable publicity, yet the preparation is used both by physicians and by the public, without due consideration of its potent ingredient, as attested by the fatal results and the habit-formation which have resulted from its use. The Bromidia advertising propaganda first admits the presence of chloral, then it is argued that in Bromidia the evil effects of chloral are eliminated and in the end the impression is left that Bromidia is practically innocuous and may be given even in cases of typhoid and to children (Jour. A. M. A., May 16, 1914, p. 1573).

THIOCOL RE-ADMITTED TO N. N. R.—In 1913 the Council on Pharmacy and Chemistry directed the deletion from New and Nonofficial Remedies of Thiocol and Syrup Thiocol, Roche, because a preparation called Sirolin, containing Thiocol as its effective component and practically the same as Syrup Thiocol, Roche, was being advertised to the public. The Hoffman-LaRoche Chemical Works having furnished assurance that the public exploitation of Sirolin has been discontinued, the Council voted that Thiocol and Syrup Thiocol, Roche, be restored to New and Nonofficial Remedies (Jour. A. M. A., May 23, 1914, p. 1637).

## IN ERRATA.

On page 128 (March issue) under New Members, A. B. Kern should be W. B. Kern.

On page 218 (May issue) under New Members, Emil C. Block should read Emil C. Black.

## DR. VAUGHN IN SAN FRANCISCO.

In the early part of June, Dr. Victor Vaughn, President-elect of the A. M. A., visited San Francisco for a few days. It was the desire of the Directors of the County Society to entertain him at a dinner, but his stay was too short to make it possible. If the A. M. A. meets in San Francisco in 1915 we will have the pleasure of a longer visit from this distinguished physician and most polished gentleman.

## GRADUATE MEDICAL WORK.

Stanford University Medical School announces a series of medical courses for the summer months, from July 6th to August 16th, which should be attractive to those desiring to take a little post-graduate study. Most of the classes are limited in number and if any are interested they should address Dr. W. W. Boardman, Lane Hospital, San Francisco, at an early date.

## DIRECTOR CHOSEN FOR HOOPER FOUNDATION.

The Medical Department of the University of California announces that Dr. George H. Whipple has been appointed Director of the George Williams Hooper Institute of Medical Research. Dr. Whipple is at present Associate Professor of Pathology in the Johns Hopkins Medical School, where he has been closely associated with the master-pathologist, William H. Welch, and where he has, for some years, been the active head of the department. His recent work upon the isolated intestinal loop in the explanation of the symptoms of intestinal obstruction has given a fresh impetus to the investigation of this subject.

The assumption of his duties by Dr. Whipple will be, to the Medical Department of the University of California, one step nearer the ideal toward which it is so conscientiously striving.

## A. M. A. CHEMICAL LABORATORY REPORTS.

The report for the last year has just been issued and shows what a remarkably valuable work the Association is doing through its chemical laboratory. Every encouragement should be given to those who are doing this work and its value should be more widely known. Copies of the report may be had by addressing the Association, 535 North Dearborn St., Chicago; the price is twenty-five cents.

## WORTHY OF PATRONAGE.

If firms in distant sections of the country advertise goods in the Journal which our readers need and which cannot be purchased at home, it is good business policy to buy from these advertisers. The fact that we admit these advertisers to our columns is proof they have been investigated and are believed to be worthy of your patronage.

## RECIPROCATE.

California welcomes the people who spend their money in this State. Our Eastern advertisers spend their money here. It is a duty we owe them to reciprocate by buying from them, instead of non-advertisers.

## WE STAND BEHIND YOU.

The firm that does not advertise its goods to you does not feel under obligation to sell you what you order. Any substitute will do as well; because he is not on record in print, as the advertiser it, to sell you the thing that was advertised. It pays to buy the advertised article. You always have a recourse, if wrong goods are shipped you.

## CLEANING OUT FRAUDS.

When this Journal started in 1902 and announced that it was going to fight fraudulent and patent medicine advertising, everybody laughed and some swore. Three years later the A. M. A. started the

Council on Pharmacy and Chemistry and the cleaning out process became much easier. Many journals and manufacturers opposed the work of the Council, for quack medicine advertisers were good pay. In view of the fact that Wm. Wood & Co., of New York, were bitterly opposed to this policy, and in view of the fact that we started the whole thing, it is indeed pleasant to quote the following portion of a circular letter sent out by them and relating to one of their publications, The American Journal of Obstetrics. It is to be hoped that some day they will apply the same rule to The Medical Record:

Dear Doctor:

I desire to call your attention to the change in the advertising pages of The American Journal of Obstetrics. In response to criticisms by individuals and to formal action by several of the societies, whose transactions are published in the Journal, it was decided about a year ago to conform to the standards of the Council of Pharmacy of the American Medical Association. Owing to the existence of current contracts, many advertisements could not be eliminated at once, but as you will see by examining the current number of the Journal, the process is now complete. This change in policy removes an objection sometimes urged by authors who contemplated a publication of articles in The American Journal of Obstetrics.

## GUARANTIES AND SERIAL NUMBERS TO END MAY 1, 1915.

The Department of Agriculture is sending individual official notices to over 58,000 manufacturers that on May 1, 1915, their guaranties filed under the food and drugs regulations will be stricken from the files and that thereafter the serial numbers assigned to such guaranties must not be used on the label or package of any food or drug. This action is in accordance with the regulations adopted on May 5, 1914, by the Secretaries of the Treasury, Agriculture and Commerce, which abolish the use of the guaranty legend and serial number on foods and drugs. The ground for this action was that the legend "Guaranteed by (name of guarantor) under the Food and Drugs Act, June 30, 1906," was understood by many consumers to mean that the Federal Government had passed upon and certified the excellence of the article so labeled, whereas the legend and serial number were merely a guaranty on the part of the manufacturer to his dealer that the manufacturer would assume full legal responsibility for his goods.

In the meantime from the records it appears that 58,816 manufacturers have filed guaranties and obtained serial numbers, the last number issued being 58,816.

The notice advises manufacturers that after May 1, 1915, guaranties should not appear on the label or package, but should be incorporated in or attached to the bill of sale, invoice, bill of lading, or other schedule giving the names and quantities of the articles. The guaranty may be printed or stamped on the invoice, and if it is signed in accordance with the new regulations and refers specifically to the goods listed in the invoice or document it covers, it need not contain a detailed description or schedule of the articles.

Manufacturers who are asking permission to file guaranties and obtain serial numbers are being advised that they should attach their guaranty to their invoices and not seek to use the legend or serial number on their labels, as the guaranty and serial number will be withdrawn within a year.

## IMPORTANT REQUEST.

My Dear Doctor:—

The Bureau for the Protection of Medical Research of the American Medical Association is desirous of obviating as completely as possible any cause for complaint against animal experimentation, as well as any criticism of new methods in medical practice. Much of the "evidence" cited by hostile agitators is taken from articles in journals devoted to the medical sciences.

Instances are frequently cited in which it is claimed that, as there is no mention of anesthetics, animals have been experimented on without anesthesia. Well-known methods of medical diagnosis are described as experiments, because authors have been careless in their descriptions.

Will you not aid the efforts of the Council by a very careful examination of articles submitted to you for publication, with especial reference to the use of words or expressions likely to cause misapprehension regarding the experience of the animals used for research? And in every instance in which anesthesia is a condition in the investigation, will you not point out to authors the importance of making this fact prominent? In clinical articles, which discuss new or unusual methods of diagnosis and treatment, it is important to make clear that these methods are undertaken with the consent of the patient or his relatives. This is especially important in connection with children. We hope that by the cooperation of all who are interested in the promotion of medical science, the development of a public opinion hostile to medical research may be checked, and that there may be, instead, a growth of popular understanding of the aims, the methods and the significance of the results of animal experimentation and their practical application in the relief of suffering in man.

Thanking you for any assistance in securing these results, I am,

Very truly yours,
WALTER B. CANNON,
Chairman, Bureau for the Protection of Medical Research.

## NEW MEMBERS.

**Thompson, Jas. Malcolm,** Los Molinas.
**Tobin, Peter Arthur,** Fresno.
**Pratt, Jean Paul,** San Francisco.
**Lucas, Wm. Palmer,** San Francisco.
**Henry, J. W.,** San Francisco.
**Bryant, F. J.,** Soledad, Cal.
**Forbes, Henry Stone,** Oakland.
**Cress, W. W.,** Sacramento, Cal.
**Wilson, Gustavus,** Sacramento, Cal.
**Brown, R. W.,** Santa Maria, Cal.
**Heinzmann, W. H.,** San Francisco.
**Clark, M. F.,** San Francisco.
**Bennett, I. E.,** San Francisco.
**Tyler, Leatha Ruth,** San Francisco.
**Girard, Frank Robert,** San Francisco.
**Shiels, G. Franklin,** San Francisco.
**Morse, Arthur Henry,** San Francisco.
**Thomas, Benj.,** Palo Alto.
**Lowell, F. S.,** Wheatland, Cal.
**Davis, W. W.,** Anaheim, Cal.
**Snyder, J. R.,** Sacramento, Cal.
**Meredith, Jesse T.,** Cedarville, Cal.
**Burton, Frank Albert,** San Diego.
**Sweet, C. D.,** Fresno, Cal.
**Burton, F. A.,** San Diego.

## DEATHS.

**Karsner, J. H. M.,** Oroville.
**Gates, Howard B.** (Died in Rome, formerly of Los Angeles.)
Whitney, Jas. D., San Jose.
Carlson, Chas. H., Yreka. (Died in San Francisco.)
**Reinhardt, George Frederick,** Berkeley, Cal.
Reed, Wm. E., Los Angeles.
Hopkins, H. St. G. L., Fresno.
Bickford, Amos W., Pasadena.
Webb, Benj. Oliver, Los Angeles.